

COAL AGE

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Using Byproducts

HABIT is strong even in the use of coal, and many a householder who the first cold days of autumn cannot get coal because of insistence upon chestnut, egg or stove sizes of anthracite could well be warm were he to be satisfied with pea coal. Not many years ago pea anthracite was known as a steam size. Since 1916 it has been more generally known as the domestic size, although comparatively few householders have learned the value of this fuel.

The producers and shippers of anthracite have done much to encourage the use of pea as a substitute for chestnut and the larger sizes in the household furnace, and in many instances this year, as in previous years, have forced retailers to accept shipments of pea in order to obtain the larger sizes. It remains, however, for retailers more generally to educate the householders in the use of this size of coal. Many of the furnaces that are now in use can be used just as advantageously with the smaller size as with the larger, although more care and labor are involved. The cost, some \$2 less per ton, should be a forceful inducement to move this coal.

Meeting the Schedule

LAST July it was stated that production of bituminous coal must be increased in the Appalachian fields by 5,000,000 tons a month to meet the necessities of the situation, that a large share of this increase must be diverted to New England and more particularly to the Northwest, and that to accomplish this increase there must be no diminution of car supply or production in the Middle West fields. A study of the preliminary figures up to Oct. 1 shows how far short of this mark we have fallen.

The program of the operators and the railroads contemplated no curtailment of off-shore exports, and there has been no curtailment. New England was to be given 1,250,000 tons of coal a month by tidewater—a million a month was shipped for two months and the demand was satisfied. The Lakes were to have 4,000 cars a day, or 1,200,000 tons a week, and that figure was reached but one week in the past two months. While the Lakes were getting their quota the consumers in neighboring states were to suffer no decrease in their supplies but the states of Ohio, Indiana and Michigan have been so pressed for coal that their special plea for assistance has just been met on the part of the operators and railroads by a promise of 2,000 cars daily for emergency distribution.

Recent statistics published by the Geological Survey showing production by states for July and August throw light on the situation. Whereas, the East was to have had a monthly increase of 5,000,000 tons, we had in August but 2,600,000 tons and the Middle West fields gained nearly 1,400,000 tons. The railroads have not

so far met the schedule in the East as regards total output nor in the West on the Lake program. Notwithstanding these unsatisfactory results the country is in better position than in July as regards soft coal. Production during August and September was almost 11,400,000 tons per week on the average and we estimate that stocks were increased by at least 7,500,000 tons from Aug. 1 to Oct. 1, bringing the total for the country up to nearly 30,000,000 tons—a figure still 10,000,000 tons below the safe line.

Will Wages Rise or Fall?

SINCE 1914 wage increases to coal miners in Great Britain have approximated 130 per cent compared with as high as 300 per cent to day labor. In the same period increases to miners in the United States have been less than 100 per cent and to day labor 164 per cent. The relatively greater increase in wages in Great Britain doubtless accounts in part for the relatively higher prices for coal produced in Great Britain now as compared with pre-war times. It is particularly significant that the day wage labor, normally the lowest paid, has received the highest percentage increase both here and abroad. And it is to be further noted that this condition holds generally throughout the world—viz., that the lower paid labor of pre-war times received during the war and subsequently the greater increase as measured by percentage.

Some observers in England are of the opinion that the next step in wage adjustment in Great Britain will require that miners paid on the tonnage basis must be granted a further increase if any increase in production is to be obtained. In this country, following the lead of Illinois and Indiana, coal operators are now increasing the rate paid for day labor. Evidence is not lacking, considering labor the country over, that the tide has turned and that instead of increases in wages decreases are about due. The problem of the Miners' Union from now on would appear to be to hold the gains that they have made rather than to try to force further increases, although their strategy may be to attempt the latter. So long as the demand for coal is strong and prices are high, the operator dare not risk the effort to force a readjustment downward, but just as there were operators who violated their contract with other operators and the miners to maintain a certain wage scale, and this summer voluntarily raised wages above the accepted rate for the purpose of holding or increasing their supply of labor when they had opportunity to produce and sell coal at high prices, there will be found operators who, when the market falls, will seek and quite possibly obtain wage adjustments in their favor. Wage contracts notwithstanding, the law of supply and demand for labor cannot be set aside and the next two years will show as great and sudden deviations as have those since 1916.

Having based their demand for increased earnings on the "American standard of living," the coal miners will have difficulty in answering the demand for reduced earnings when costs of commodities have decreased and this same standard of living requires less income.

What the Consumer Buys

TESTIFYING before the Interstate Commerce Commission last July, Eugene McAuliffe stated that when you read of the \$6, \$10 or \$12 prices for coal it is transportation that is being sold and not coal. He further stated that the public utilities and general public are engaged in buying the use of coal cars and that they are paying the tariff freight rate and, in addition, to someone other than the railroads, even greater sums to secure the use of a coal car and its collateral and attendant train service. The same point was made by Senator Calder in his investigation of the coal situation last summer, when he stated that the foreign buyers of our coal were not paying high prices for the coal but were buying our transportation.

Under normal conditions, however, when the market is really competitive, it is coal plus service that the consumer buys—service that involves the analysis of the consumer's need and the delivery of the particular grade and kind of coal at the right price and in the proper quantity, and that often, in addition, gives the consumer the benefit of technical knowledge in the combustion of the particular coal furnished.

The sellers of coal today who expect to be in business tomorrow, whether producers of the coal they sell or jobbers and, therefore, buyers of the coal they sell, are thinking about the fundamentals of coal merchandising and endeavoring to maintain their reputation for selling service with their coal today in order that they may have the pick of the market tomorrow, when coal will be seeking an outlet. An example of this forward thinking is to be found in the well-written advertisements appearing in New York papers emanating from the Wholesale Coal Trade Association of New York. It is one thing to agree that the public needs education in what the coal industry is and what its aims are and another to spend your money to educate that public.

Good Resolutions

WHATEVER be the fruits in other directions of the numerous investigations of profiteering in coal now being conducted by the Department of Justice, it is certain that the evils and malpractices of the coal industry are being well advertised. Honest confession is said to be good for the soul, and we therefore read with interest the rather lengthy resolutions adopted by the Northern West Virginia Operators' Association and presented to the Attorney-General at Washington, which are reported to have led to a suspension of direct action on the part of the Government to correct conditions alleged to exist in the sale of coal in that region.

The general purport of the document drawn up in Fairmont is that the signers, after enumerating all the undesirable things that may be done in selling and reselling and overselling coal, promise not to do it any more. In brief, the signers of this document agree to limit the hands through which each consignment passes to two wholesale dealers, to fulfill contracts before selling coal on the open market, to take care of local require-

ments before shipping to tide, to co-operate with the railroads by obeying embargoes and preventing over-shipment on genuine permits and frowning on false or forged permits, to limit export sales to actual export business and, to accomplish these results, to form a Committee on Fair Practices and, finally, to co-operate fully with the Department of Justice.

If we did not know the high standards of business ethics of many who have voluntarily signed such a remarkable document of self-indictment we would, indeed, be ready to believe many things that have been said in public and otherwise regarding the iniquities of the coal trade. Someone must lead the way, however, and if to influence the real offenders the innocent must come forward and share the adverse criticism that has fallen upon the industry, both locally and nationally, those who have prepared the way for cleaner dealings are to be commended. They have nothing to fear from the investigation of the Department of Justice, and if they have removed from their districts the possibility of having the stigma of indictment for profiteering, they have indeed done well.

Waning British Coal Profits

STATISTICS of production, costs, and profits of the coal-mining industry in Great Britain for the quarter ending June 30, 1920, have recently been published. Compared with the report for the first quarter of this year these figures show a decline in operating margin from more than £14,000,000 to slightly less than £8,000,000. The principal reason assigned for this large decrease in margin is the fact that export tonnage from Great Britain declined in the second quarter by a quantity in excess of two and one-quarter million gross tons, compared with the first quarter. The total production declined 3,913,000 gross tons in the second quarter, due mainly, it is stated, to the greater number of holidays observed by the miners.

These figures show that the cost per ton for wages and supplies increased by 4s. 2d., whereas the price at the mines of coal sold increased but 2s. The average earnings per man employed in the production of this coal increased by 47s. 9d., due to a wage advance on March 12. Whereas the gross margin per ton received by the operators was a trifle over 3s. in the second quarter of 1920 as against 5s. 2d. for the first quarter there remained to be deducted from this margin depreciation, interest and the profit to which the owners are entitled under the law in Great Britain, which together are estimated by one authority to have been approximately 2s. 8d., leaving a net profit for the second quarter of about 4d. per ton.

It is the export trade which gives the British coal operator his margin of profit. Statistics compiled by the South Wales Coal Owners' Association, one of the largest exporting groups in Great Britain, shows that coal for consumption inland for the second quarter was sold at a loss estimated at more than 5s. per ton. A sharp restriction on the quantity of coal allowed to be exported since June is expected to cause a still further decrease in the operating margin available to the British coal producer for the second half of the year. This loss, however, is a result of the policy of the Government stocking up coal consumers with ample supplies in anticipation of the strike of the coal miners, forecast so long in advance, and now, perhaps, forestalled.

Brooklyn Edison Co. Official Admits Coal Profiteering

Harry P. Wood, until recently operating engineer in charge of the coal purchasing for the Brooklyn Edison Co., Inc., appeared before Judge Mayer in the Federal District Court Oct. 8 and entered a plea of guilty to indictments charging him with engaging in a conspiracy with the Brooklyn Edison Co., Inc.; Walter F. Wells, its vice-president and general manager, the Adelphia Coal Co., Inc., and the B. J. Lynch Coal Co., Inc., to profiteer in and hoard coal in violation of the Lever Act.

Lynn Put on Coal Ration

Lynn, Mass., went on a one-ton coal ration Oct. 8. Residents must make application to the Health Commission before dealers will supply them. The situation resulted from an agreement between Mayor Creamer and local dealers.

Roads Make New Traffic Record

Leading railroads set a new high record for the year in the volume of freight traffic handled during the week ended Sept. 25, it was announced by the American Railroad Association. Cars loaded with commercial freight numbered 994,687, compared with 987,041 in 1919 and 991,980 in 1918. The best previous record for this year was the week of Aug. 28, when 985,064 cars were loaded. During the week of Sept. 25 increases are shown as compared with the corresponding week of 1919 in the loading of grain, coke, ore, and merchandise, while decreases are shown in livestock, coal, and miscellaneous freight.

Coal Appeals Telegraphed to President Wilson

Telegraphic appeals to the White House from many sections of the country for relief from threatened coal shortage and for an agreement on methods of preventing serious conditions this winter have been referred by the President to the Interstate Commerce Commission. Announcement that the commission would deal with the situation was made by Secretary Tumulty after he had conferred with Daniel Willard, president of the Baltimore & Ohio, and Howard Elliott, chairman of the board of the Northern Pacific R.R. The suggestion that it might be necessary to name a coal controller has not been considered, Mr. Tumulty said.

League Labor Congress Offers Seat to America

The International Labor Congress of the League of Nations, in session at Geneva, decided unanimously Oct. 6 to offer the seat of one govern-

mental delegate in the International Labor Commission to the United States. It was also decided to create an international office of statistics, prices and quantities, one section of which will be devoted to coal, this section to be attached to the financial and economic section of the League of Nations. The decision of the Congress was intended to satisfy a demand formulated by the recent International Congress of Miners.

Seek Owners of Confiscated Coal

The Railroad Administration announces that owners of a million tons of coal which was confiscated and consumed by the railroads during the strike of 1919 are yet to be

NEWS BRIEFS

Terse Items Chronicling Events of Interest to the Industry

located. Marion J. Wise, manager of department of materials and supplies, Division of Liquidation of Claims, is attempting to trace the ownership of the coal in order that settlement may be made. During August and September payment was made for about 266,000 tons of confiscated coal, while new claims for a like amount of coal were received.

Canada Returns to War-Time Fuel Regulation

Fuel control regulations similar to those enforced in Canada throughout the winter of 1918 were issued Oct. 7 by the Dominion Board of Railway Commissioners acting for the Federal Government. The order regulates the amount of available coal to be allotted to each province and to individual consumers.

Governor Cox Revives Ohio Fuel Control Board

Governor Cox has revived the Ohio State Fuel Committee, which in 1917, up to the time of Federal fuel control, supervised distribution of coal in Ohio. His action followed word from Washington that 2,000 cars of coal would be furnished daily in Ohio, Indiana and Michigan to prevent a shortage. The committee is to distribute the available coal, giving priority to shipments for municipalities and regions most in need of it.

To Force Separation of Reading Coal and Rail Holdings

Steps to force the Reading Company, holding company, and the Philadelphia & Reading Railway and several underlying railroads to dissolve their relationship with their coal companies, as was ordered in the recent decision of the U. S. Supreme Court, were taken in Philadelphia Oct. 6. A. F. Myers, an Assistant Attorney General from Washington, presented a petition to U. S. Circuit Judges Buffington, Woolley and Davis, requesting them to fix a date when the Reading Company and its operating companies must submit a plan for the severance of relations with the coal companies. Ninety days was allowed.

Welcomes Clear and Definite Railroad Policy

One of the most important domestic events of the year in the opinion of Allen B. Forbes of Harris, Forbes & Co., was the enactment of the Transportation Act of 1920, involving the return of the railroads to private ownership. Mr. Forbes stated that for the first time in three years we have a clear, definite policy from Congress for railroad operation under private control. He commended the Interstate Commerce Commission, saying it had demonstrated its intention to fully carry out the provisions of the Railroad Act and to do its part in the restoration of railroad credit.

"Soo" Canal Coal Traffic

According to the monthly report of the U. S. District Engineer's office of freight traffic through the "Soo" canals during September, 2,040,774 net tons of soft coal and 177,123 net tons of hard coal passed through westbound.

Panama Canal Tolls Exceed \$1,000,000 a Month

During September tolls exceeding \$1,000,000 were collected from ships using the Panama Canal. For more than six years this has been the goal for which the canal authorities have been aiming.

Lowering of Dams Helps the Movement of Coal

Fully 1,000,000 bushels of coal were transported to the Cincinnati market during the last days of September on the crest of an artificial wave created in the Ohio and Kanawha Rivers by the lowering of the dams in the rivers named. All the dams in the Ohio River beginning in the Pittsburgh district were lowered. It is estimated that the coal thus transported by boat would have required 1,000 railroad cars or approximately twenty-five freight trains.



A Careless (?) Miner and a Rock Fall

As is well known, falls of roof and coal take as great a toll of life in the mines as all other accidents put together. A mine explosion, a flood, a fire, a powder flare are all spectacular and each is accorded prominent "scare heads" in the newspapers. A fall of rock, on the other hand, snuffs out only one or at most

only two or three lives at a time. Consequently little ado is made over it in the press. In the aggregate, however, the "fall" takes many more lives each year than does either the fire or the explosion.

The great ally of the fall is

—*"Carelessness"*

Despite the Dime-a-Day Wage Labor-Saving Is Practiced at a Manchurian Mine

At Two Fushun Mines 16,200 Men Are Employed—They Produce About 8,000 Tons, or Half a Ton Per Man Per Day, at a Cost of 75c Per Ton — Material Excavated Is Promptly Backfilled—Seam Is from 120 Ft. to 170 Ft. Thick

BY GEORGE FREDERICK ZIMMER
London, England

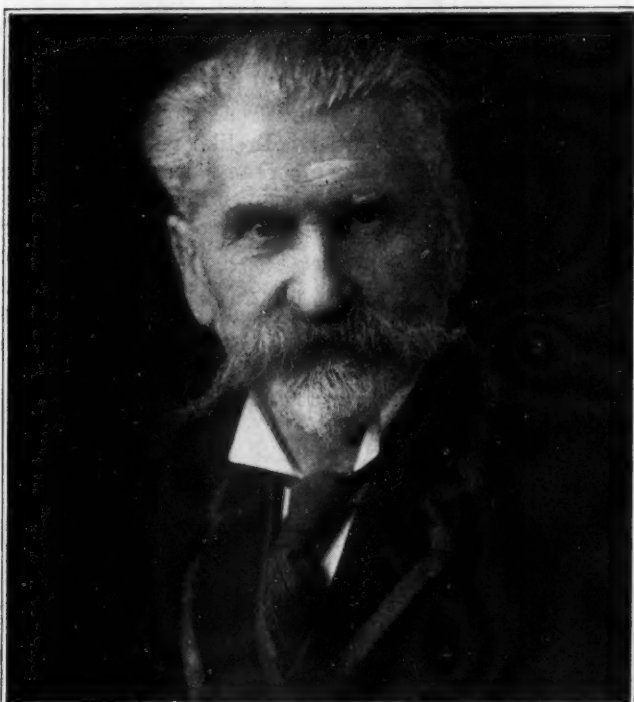
NOT only is it a triumph for the material-handling engineer but it is also an unmistakable sign of the times when a country like Manchuria—where labor is as cheap as 10 to 18c. per day—adopts mechanical devices for the handling of coal.

The Fushun coal mines employ 15,000 Chinese and 1,200 Japanese, making a total of 16,200 men in and about the mines. The bed from which the Fushun coal is obtained is the thickest yet discovered on this planet. It may be well, therefore, to briefly enumerate, by way of introduction, a few details of general interest.

The South Manchurian Railway Co., owner of the Fushun mines, was organized in 1906, the line having been transferred from Russia to Japan at the Portsmouth Convention in 1905. The main line of the railway from Dalny (now Dairen) to Kwanchengtzu is 439 miles long; the line was originally built in 1900-1901 and forms an arm of the Trans-Siberian route, the Russian (5-ft.) gage being employed. In order to accommodate Japanese rolling stock this gage was converted during the Russo-Japanese War to the Japanese standard of 3 ft. 6 in. On April 1, 1917, the South Manchurian Railway Co. took over the line from the Japanese Government, and in June, 1908, the gage was altered a third time to the standard of 4 ft. 8½ in.

PRODUCTION AND BACKFILL COST 75c. PER TON

In 1909 Head, Wrightson & Co., of London and Stockton-on-Tees, was requested by the South Manchurian Railway Co. to send out a representative to advise on the laying out of a surface arrangement for the exploitation of the mines. In response to this request Henry Clark, the London representative of the firm (to whom I am much indebted for information concerning this plant) went East and designed on the spot an installation for a total output of 6,000 tons of coal per day. This has been increased considerably since, for on the occasion of Mr. Clark's last visit



George Frederick Zimmer

An authority on coal handling, being the author of a standard book on the subject "The Mechanical Handling and Storing of Material"

to the mines, in 1916, the output was 8,000 tons per day. The cost of this production was less than 75c. per ton f.o.b. cars, exclusive of depreciation and interest on capital expenditure. At the present time 10,500 tons of coal are being brought to the surface per day.

Fushun is the terminus of a short branch line thirty-four miles long, from the Suchiatun Junction. It lies, roughly speaking, about thirty miles to the east of Mukden. The coal belt stretches a distance of about ten miles east and west, while the width of the workable deposit is about one mile. The bed dips toward the north on an average of 30 deg. and is from 120 to 175 ft. thick. It is estimated that this deposit contains 800,000,000 tons of coal. Owing

to the great thickness of the bed it has to be worked in steps or benches 10 ft. at a time, beginning at the lowest point and working up on hydraulic stowage. Sand for this purpose is brought from the River Hun in cars after screening. It is washed down the shaft by water in pipes and thus conveyed by gravity to the desired point. This sand packing absorbs much labor, but this is, nevertheless, all included in the 75c. per ton already given as the production cost.

MAY NOT BE STORED OVER TEN FEET DEEP

The valley of the River Hun, parallel to and under which the coal field lies, is hemmed in to the south by a range of hills at the foot of which the outcrop may be traced. Gneiss, the oldest formation of the earth's crust, forms the bed upon which the coal-bearing strata rest. Two beds are found which alternate with shale, sandstone and conglomerate. At present only the upper of these is worked and it yields the famous Fushun coal. This deposit was formed in the Tertiary period, as is true of most Japanese coals. The bed is overlain with a thick layer of shale containing plant fossils.

The quality of the coal is good and runs quite uniform. The color is of a lustrous black and the material is rich in volatile matter, the heating value of the

coal being 7,500 calories (13,500 B.t.u.). Ash and clinkers are scarce, while sulphur and other objectionable matter is almost entirely absent. This coal is undoubtedly fiery—i.e., it possesses a tendency toward spontaneous ignition—and it is recommended that it be not stored more than 10 ft. deep unless adequate ventilation is provided.

Regarding the minor workings, the Fushun coal mines consist essentially of two distinct installations—viz., that at the Oyama pit and that at the Togo pit. Since these are similar it is proposed to describe first, somewhat minutely, the general layout on the surface at the Oyama pit, following this with a briefer description of the Togo surface plant.

CONVEYS COAL TO SHALLOW STOCKPILE

The general surface layout of the Oyama pit may be seen in Fig. 1. At the top of the illustration on the left-hand side is the downcast shaft, and at the right, 180 ft. distant, the upcast. The usual tramways of 24-in. gage proceed away from both shafts for a distance of about 50 ft., when they curve on ample radii 90 deg. toward each other, and combine, after again curving toward the screening plant, into one double tramway. Before reaching the screening plant, however, there are

installed as an emergency precaution two side tracks, each passing through a dump, whereby the mine cars, if necessary, may be discharged onto two Marcus conveyors, one extending to the right and one to the left. These convey run-of-mine coal to two extensive stockpiles. The conveyors are 200 ft. long and located about 25 ft. above ground level.

Under normal conditions, however, the mine cars pass by these dumps, and by means of a network of sidings and switches the loads can be shunted to any of three dumps, discharging the coal to three corresponding Marcus screens, designated in Fig. 1 as Nos. 1 to 3. These extend at right angles to and span five parallel railroad tracks, so that the coal can be classified into different sizes prior to loading. Each Marcus screen first sifts out the "duff" (slack), and all three deliver this fine coal into a long but shallow hopper over the railroad cars on the duff track.

In like manner the nut coal from each of the three screens is delivered to an apron conveyor over the nut road. The three remaining roads receive "best," or lump, coal and are marked in the illustration "best roads." The coal delivered to all of these last three roads is of the same quality and size and has been picked on Marcus picking conveyors. After passing the

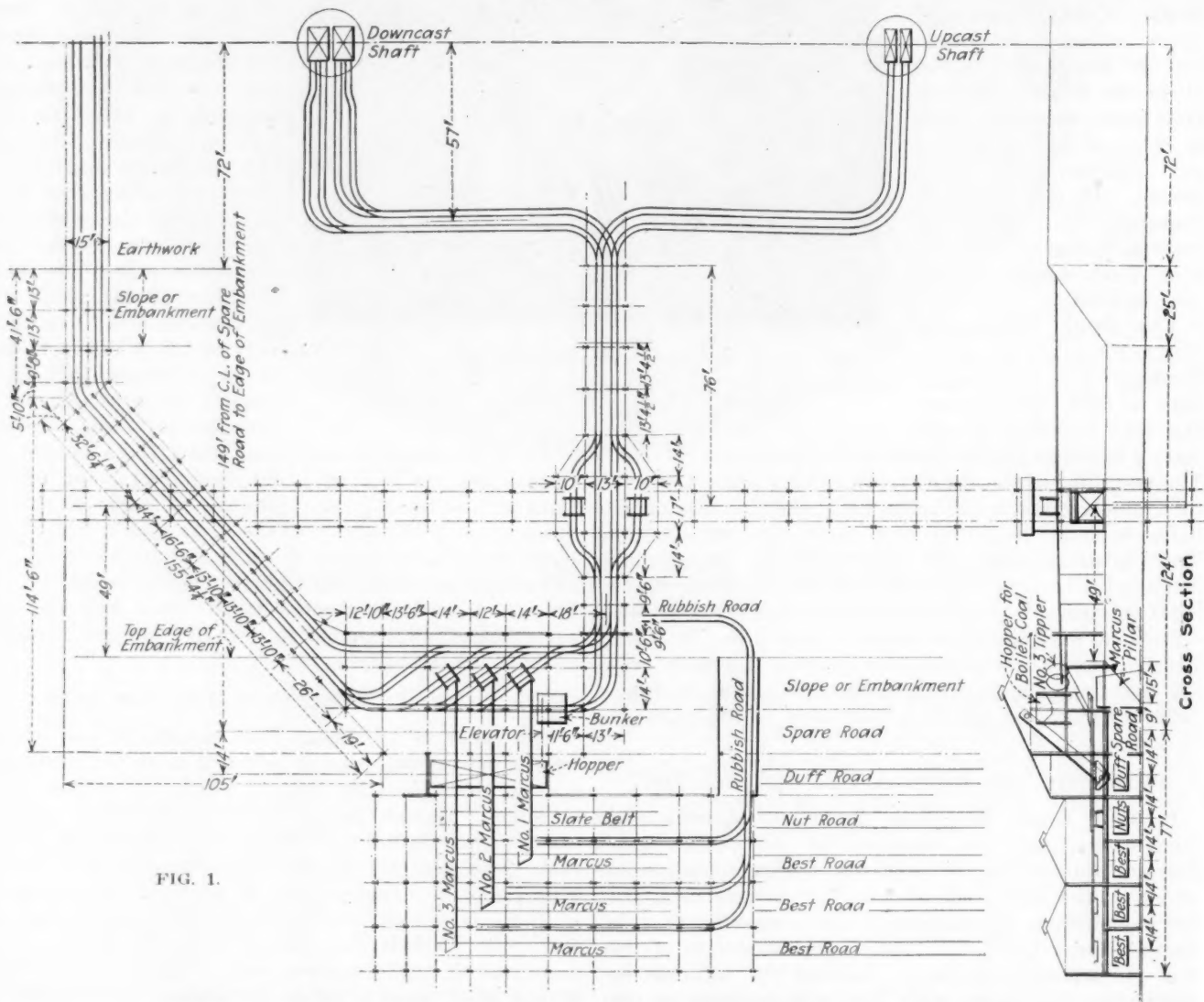


FIG. 1.

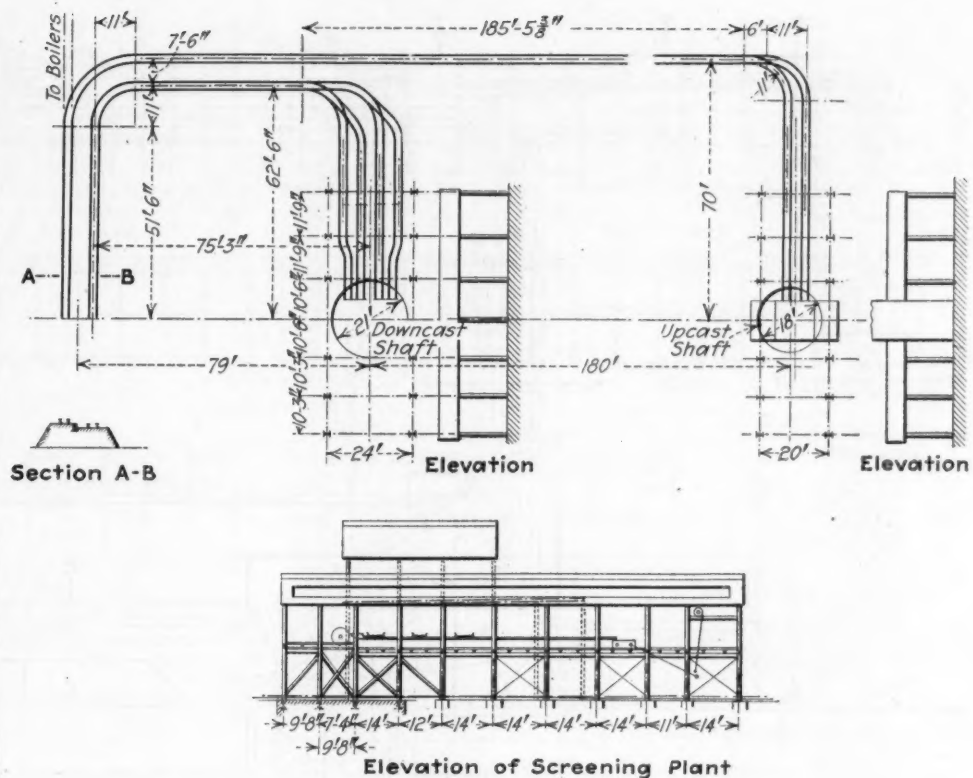
FIG. 1. OYAMA PIT IN THE CELEBRATED FUSHUN DISTRICT OF MANCHURIA

Downcast shaft has two cages, each carrying four cars; the upcast also has two cages, each of which carries two cars. The cars travel toward the railroad tipple, but in passage they can be switched to one of two revolving dumps, where they can be discharged to conveyors which deliver the coal to a large stockpile parallel to the railroad. The return road to the shafts is shown in Fig. 2.

FIG. 2.

Return Tracks Oyama Colliery

After being discharged over one of the three railroad-tipple dumps or over one of the two stockpile dumps, the cars return toward the shafts, a car haul lifting them up a 25-per cent grade so that gravity will provide facilities for the return. The self-dumping cage and the skip hoist have not yet been adopted by British engineers. Either of these arrangements greatly simplifies operation.



three dumps the empty mine cars return by gravity to the shaft, suitable elevation being re-secured on the way by means of a creeper or car haul with an inclination of 25 per cent.

When fuel is required for the boilers at the power plant it is withdrawn from the shallow slack hopper, already mentioned, by an inclined bucket elevator and is raised to an overhead hopper, from which it is taken to the boilers by cars on a narrow-gage track. A cross-section through the plant is shown in Fig. 1, and will doubtless render the foregoing description more readily intelligible. The return delivery of empties to the down- and upcast shafts is shown in Fig. 2, which is a longitudinal elevation of the screening plant.

CONVEYOR TRANSFERS COAL 200 FT.

In the surface layout of the Togo plant, Fig. 3, the upcast shaft is located on the left-hand side and the downcast shaft 180 ft. to the right, toward the center of the drawing. The tracks from this latter shaft on their way to a set of three dumps, which are similar to those installed at the Oyama mine, are provided with an alternate line to a tipple which loads run-of-mine coal onto a Marcus conveyor 200 ft. long. Only one dump for run-of-mine coal is here installed. The tracks from the upcast shaft lead, after traversing a gentle curve by an incline first of 2.222 per cent and then of 1.25 per cent, to the three dumps over the screening plant. As this plant is practically the same as that at the Oyama installation it need not be described further.

All the empties from both shafts of the Togo plant return on the same track via a creeper, or car haul, ascending an incline of 25 per cent. The down gradient is for the first part 1.626 per cent and for the latter part of the journey 0.581 per cent. The spurs leading to the downcast shaft have an inclination of 3.33 per cent while those for the upcast are inclined 1.66 per cent.

Fig. 4 embraces a number of sectional views taken at various points through the plan shown in Fig. 3.

The two upper sections represent a portion of the track lying between the upcast and downcast shafts respectively and the screening plant, while the next section shows an elevation of the track by which empty cars return to the two shafts. Then follow various sections of minor importance until the lower diagram shows a section H-H, the left-hand portion of which is the gravity run from the upcast shaft to the screening plant, while the right-hand portion depicts the ascent of the empty cars to the point from which they gravitate to the two shafts.

OYAMA SHAFT BRICK-LINED AND 1,200 FT. DEEP

A general idea of the Marcus screen for classifying the coal will be gained from Fig. 5.

At the Oyama pit the downcast shaft is 21 ft. in diameter, brick lined, and 1,200 ft. deep; the upcast shaft is similar but is 18 ft. in diameter and has steel-plate air boxing. The fan drift is 12 ft. wide and 15 ft. high and has therefore a sectional area of 180 sq.ft.

From center to center of the two shafts is a distance of 180 ft. and the elevation of the pit mouth is 32 ft. above the railway grade. The elevation of the stockyard is 18 ft. below that of the pit mouth, or roughly midway between the level of the collar of the shaft and the railway level. Such an arrangement is highly favorable to reclaiming, partly by gravity, such coal as has been put into storage. As may be seen from the drawings, the sloping ground has been levelled into two terraces. The coal is brought across the stockyard to the screening house.

The headframes are practically the same in shape for both down- and upcast shafts and are of the lattice girder type. The height from the surface landing to the center of head sheaves is 75 ft. Both frames are of steel construction throughout.

Cages for the downcast shaft are single-decked with balance-ropes underneath. They are built to carry four coal cars. Those for the upcast shaft are single decked,

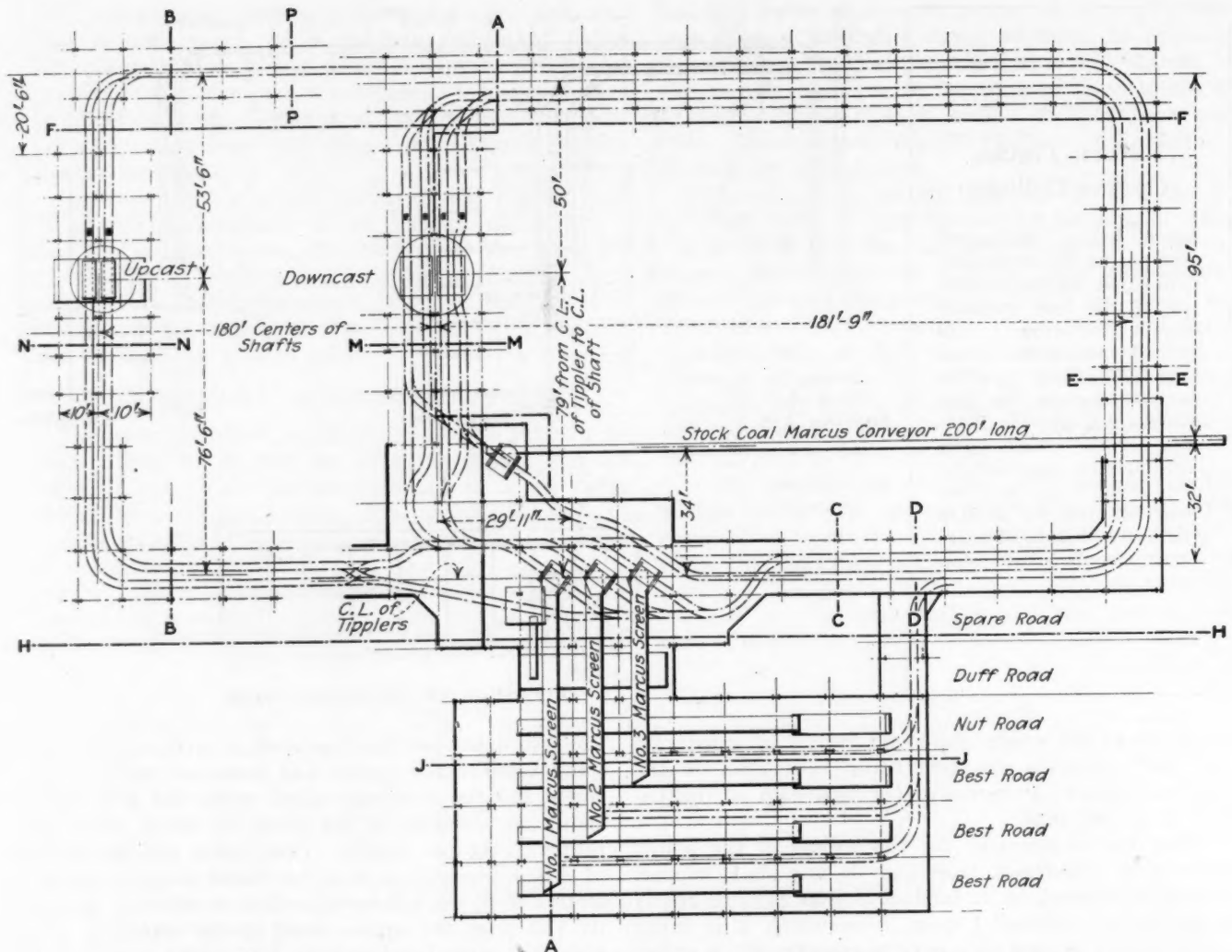


FIG. 3. TOGO PIT HAS SURFACE LAYOUT QUITE SIMILAR TO THAT OF OYAMA COLLIERY

Here, however, the tipple instead of being symmetrically located is to one side of the shafts. There are three rotary dumps on the tipple, but only one over the stockpile. It will be noted that the Manchurian trade apparently is satisfied with the four kinds of coal—lump, nut and slack with run-of-mine from the stockpile.

carry two cars and have no balance-ropes. All cages have tilting bottoms and those for the upcast are fitted with side plates. These cages travel on four $1\frac{1}{2}$ -in. guide ropes in the downcast and on $1\frac{1}{8}$ -in. rope guides in the upcast shaft.

The mine cars are built entirely of steel and for a track gage of 24 in. They have a body 4 ft. long, 3 ft. 2 in. wide and 2 ft. high; the wheels are 12 in. in diameter on the tread while the wheelbase is 16 in. Each car has thus a content of 25 cu.ft., sufficient to hold 1,350 lb. of coal. The track rails weigh 24 lb. per yard.

The hoist engine for the downcast shaft is designed for a maximum load of ten tons, including cage, loaded cars, rope, detaching hook, etc. The speed is timed for one hoist per minute, including "banking"—that is, caging and decaging. The quantity of coal raised in one hoist is 2.4 tons, and the maximum quantity brought to the surface in eight hours is 1,152 tons. A cross-compound Corliss type of engine is employed. This is designed for a boiler pressure of 160 lb. per square inch. The diameter of the high-pressure cylinder is 25 in., that of the low-pressure cylinder 41 in., while the stroke is 54 in. The cylindrical hoisting drum is 14 ft. in diameter and 11 ft. 6 in. long and is designed for a rope $1\frac{1}{8}$ in. in diameter. The cylinders are steam-jacketed and the machine is fitted with steam reversing gear, reheating receiver, Witmore brake engine con-

troller and the usual overwind governor. There are also installed speed governors, depth indicators, and a steel-plate guard for the drum. Two overhead traveling hand-operated cranes are provided over each engine. These cranes are of 122 tons and 5 tons capacity respectively.

The engines for the upcast shaft are built for a maximum load of 6 tons; the time of hoisting is the same, one minute, including banking, as in the case of the downcast shaft. The quantity of coal per hoist is 1.2 tons with a maximum of 516 tons in eight hours. The engines are of the duplex Corliss type with cylinders 18 in. in diameter and 48-in. stroke. The cylindrical drum is 10 ft. in diameter and 8 ft. long. All other conditions and fittings are the same as for the downcast engine. These machines were built by Fraser & Chalmers.

FAN TO PROVIDE SIX-INCH WATER GAGE

The fan engines are capable of exhausting 300,000 cu.ft. of air per minute against a water gage of 6 in. The fan is 18 ft. in diameter and 6 ft. wide. This machine is of Walker's indestructible type, with anti-vibration shutter. The fan engines are of cross-compound Corliss type with a high pressure cylinder 17 in. and a low pressure 34 in. in diameter, while the stroke is 42 in.

The flywheel is 16 ft. in diameter and grooved for

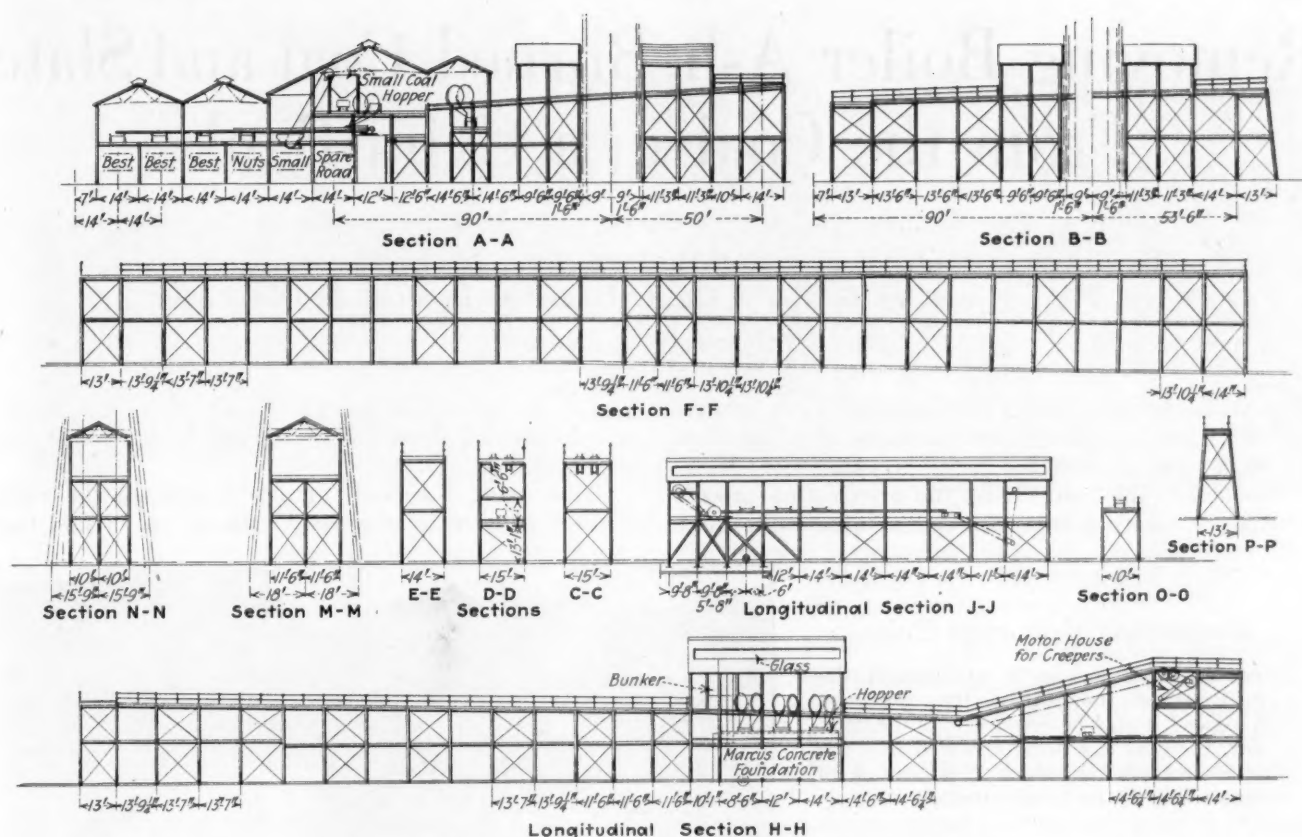


FIG. 4. PROFILES OF THE TRACKS AT THE TOGO COLLIERY

A short gradient of 1.626 per cent is followed by a lighter gradient of 0.581 per cent, which is a somewhat low gravity gradient, especially for a cold country. The grades leading to the downcast shaft are on a gradient of 3.33 per cent, while those leading to the upcast are on a 1.66 per cent grade.

eleven 1½-in. ropes. It weighs 13 tons. The speed of the fan is 170 r.p.m., while that of the engine is 70. The condenser is of the jet type with vertical air pump driven direct from the main engine. The fan engine can be run by either the high-pressure or the low-pressure cylinder independently, and the fan may be operated either blowing or exhausting. The fan engines were built by Walker Brothers.

The central power plant generates electric current for the operation of the surface and underground equipment at all the pits of the Fushun mines. It furnishes power also for the central workshops, water works and for lighting. This current is 3-phase, 60-cycle, 2,200-volt. The generators comprise two 500 kw. Parsons turbo-alternators with direct coupled exciters, and two 1,000 kw. Parsons turbo-alternators also with direct coupled exciters. All four machines operate at 8,000 r.p.m. Each is fitted with horizontal surface condenser having electric vacuum pump, circulating and lifting pumps and vacuum augmentors. A 10-ton overhead traveling hand crane also is provided.

The cooling pond for the condensing water has an

area of 3½ acres and contains 1,200,000 cu.ft. of water. The water pipes from the pond to the power house are 22 in. in diameter. The boiler house contains seven Babcock & Wilcox boilers, each having 4,020 sq.ft. of heating surface and an evaporating power of 12,300 lb. of steam per hour. They are equipped with stokers of the Babcock & Wilcox chain-grate type. The superheaters, integral with the boilers, superheat the steam 100 deg. to 200 deg. F.

Three feed pumps of the duplex Worthington type are installed. These have steam cylinders 10 in. in diameter with a 10-in. stroke. The plunger diameter is 6 in. Green economizers also are provided. These are installed in four sets, each consisting of 240 tubes 9 ft. long and 4½ in. in diameter. The smokestack is 150 ft. high and has a diameter of 10 ft. at the top.

The salient features of this extensive plant are not centered in the individual machines and devices of which it is composed—though these, as will readily be seen, are all of the best type—but in the arrangement of the whole. This is in every respect an ideal solution of the problem involved and allows ample space everywhere.

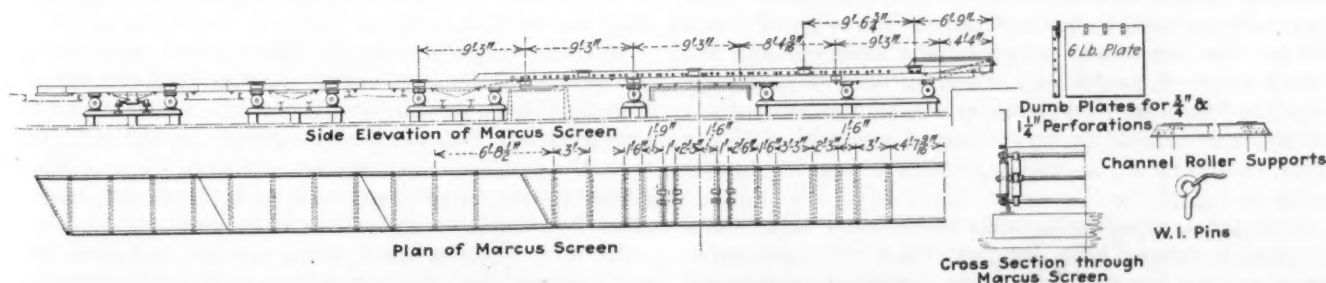


FIG. 5. SIDE ELEVATION AND A PLAN OF SCREEN

Three screens are used at each tippie, handling the coal from three distinct revolving dumps and separating the coal into three sizes: lump, or as the British say "best," nut, and slack, or "duff." There are three lump-car railroad tracks, one nut-car and one slack-car track.

Removing Boiler Ash, Burned Coal and Slate From the Coal in a Culm Bank

Culm Is Even More Difficult to Prepare Than Freshly-Mined Coal—By Selection in Shoveling and in Hydraulicking, by Hand and Mechanical Picking and by Jigging a Clean Domestic Product Is Obtainable

BY DEVER C. ASHMEAD
Wilkes-Barre, Pa.

PROBLEMS involved in the preparation of anthracite from culm banks are frequently more intricate than those encountered in the preparation of freshly-mined coal. Not only must the preparation process involved in treating this material eliminate the slate

to prepare the coal remaining in such banks it is necessary to provide some means whereby these ashes may be removed.

Unless such a removal of ash is effected the value of the product will be greatly reduced. It is said that

FIG. 1.

Reclaiming Unburned Culm

A cut is being driven to get around the burned part of the bank so that the good coal back of it may be reached. As the bank is low, the coal has to be shoveled into the dragline scraper, by which it is carried to the main line in the foreground.

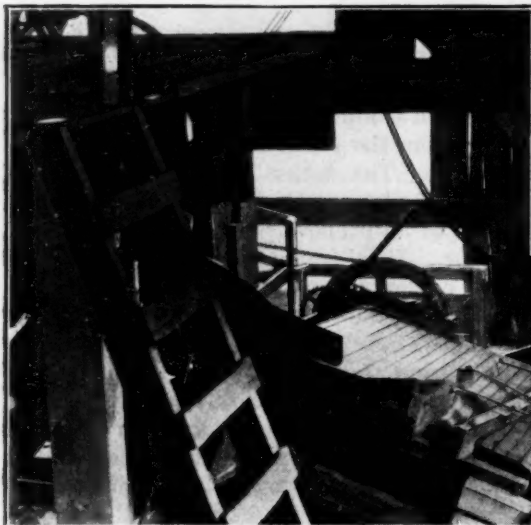


FIG. 2.

Chestnut Coal Picker

Picker removes the sluggish flat ash and slate from the rounder and, therefore, more nimble coal. All spherical boiler ash is removed by hand. By these means a valuable mineral product discarded for many years and mixed with rubbish is now doing its part to meet the coal scarcity.

and other impurities that are found in the freshly-mined product but they must also reject extraneous matter of a different type that has been added to the culm from time to time.

When the material of which the culm bank is composed was mined it was considered worthless, and as a result no care was taken for its preservation. It was originally believed to be too small in size to be of value, but as time progressed improvements were made in the construction of grates and other burning devices that permitted the use of the smaller sizes. Consequently a market has arisen for this rejected material, and the culm banks have, in some instances, become highly valuable.

Upon the existing culm banks boiler-house ashes have, in many instances, been dumped; the banks have sometimes caught fire and have been completely destroyed. In others they have been only partly burned away. Culm-bank fires naturally produce ashes, and in order

2 per cent of ashes will reduce the selling price of the coal more than twice that amount of slate. This is largely because of the fact that the ashes are visible while the slate can be detected only with difficulty. Besides there is a disposition to regard ashes as evidence that the coal has at some time been rejected and to argue that the product should therefore be sold for little or nothing.

Methods employed at the preparation plant of the Phoenix Coal Co., operating a culm bank of the old Phoenix Mine, owned by the Lehigh Valley Coal Co., near Pittston, Pa., are highly interesting and well illustrate the problems encountered as well as their solution. A description of the bank and its contents will help to show how existing difficulties have been met.

No slate of large size is found in this bank, but there is an appreciable quantity of this material chestnut size and smaller. When about one-half of the bank had been formed boiler ashes were dumped upon it to a depth



FIG. 3. A MOUNTAIN OF CULM WITH STRATA OF BREAKER WASTE AND BOILER ASHES

To the right is a bank that has been entirely burned away and beyond the illustration there is much culm which has burned till it is now a pile of worthless ash. The main dragline scraper can be seen to the right of the picture. The firm which is utilizing the culm and saving it from incineration in place (which is the ultimate fate of the coal in many culm piles and ever likely to be the fate in all) is the Phoenix Coal Co.

of approximately 25 ft. After this, for some unknown reason, the dumping of ashes was discontinued, and more fine coal was deposited on the top of the existing bank, with here and there a small amount of ashes intermixed. This makes the recovery of the coal difficult and its preparation for the market, consequently, more interesting. On top of all this the dump caught fire and is burning at the present time.

In order to isolate the fire from the rest of the bank, a cut was made through the unburned coal, separating the fire from the balance of the bank. The burned area may be seen to the extreme right of Fig. 3. Still further to the right, beyond the field of vision in this picture, is more unburned coal. Fig. 1 shows the men driving a cut through the pile to reach this coal. At the point where these men are working the material is so hot that from time to time it is necessary to thoroughly wet it down, otherwise the men would burn their feet.

As may be seen in this latter illustration, the coal is loaded by hand into a dragline scraper because the bank is not so high that the material in it can be successfully washed into the conveyor with water. This particular scraper line discharges to another operating at right angles with it, which extends to the breaker itself.

Ordinarily, the material is washed or hydraulicked into the scraper line. As far as possible, a first preparation is made in the pile itself, thus roughly separating the coal from the ashes. Where the material is loaded into the conveyor by hand this is comparatively easy since the men can readily throw the ashes to one side. In the main bank, however, where the stream of water is used, the attempt is made to separate the coal from the slate and other extraneous materials by hydraulicking them separately.

By a system of troughs the ashes are carried away to a point beyond the bank, after which the coal is washed to the scraper line. This method saves handling in the preparation plant a large part of the ashes that are found in the culm bank, but no matter how much care is used in this process it is impossible to remove all the ash in this manner, and some of it finds its way into the coal that goes to the breaker, where as much as possible is removed by hand and by the aid of various types of machines.

Two kinds of ashes are encountered in the bank. One is boiler refuse and in general is approximately

spherical; the other is flat and is such as will ordinarily result from the burning of coal in the bank or in such fires as generate a lower intensity of heat than a boiler fire. Both shapes are exceedingly hard to remove. The main conveyor to which two gathering draglines discharge takes the coal to the foot of the breaker and delivers it into a hopper. From that point it is elevated to the top of the building by a bucket conveyor. This discharges the material onto a shaking screen, where it is sized. All sizes below pea go directly to their respective pockets, but it is necessary to give the chestnut and pea coal further treatment.

In this screening process a large amount of material larger than chestnut and in some instances larger than stove is separated. After the product is handpicked to remove the slate, this material is sent to a crusher and is reduced to chestnut size. This is done because it is difficult to make a car of egg or stove coal from a culm bank look as bright and clean as it should, since the surface of the coal is usually more or less discolored. This makes marketing difficult and the price obtained will be below that normally procurable for that size of coal. If the material is crushed, however, so that a freshly-broken surface is exposed, this will be as bright as that found upon freshly-mined material. It may, therefore, be readily disposed of.

BOILER ASH MUST BE DILIGENTLY HAND PICKED

The crushed material is returned to the screen for re-sizing and subsequent treatment. Ordinarily the boiler ashes are removed from chestnut by the simple but tedious process of hand picking, no other method successfully performing this operation. Flat ashes, on the other hand, may be removed by mechanical treatment. This is accomplished on an Ayers picker. One of the accompanying illustrations shows the chestnut picker which is in use in this breaker. This type of machine consists of a moving metallic apron placed on such a pitch that when the coal to be cleaned is discharged upon it from a chute at the proper point the round or nearly round particles roll down the belt to the lower edge, while the flat pieces, because of their shape and the fact that they will not roll, are carried away by the belt and discharged over the end. This belt travels at the rate of about 150 to 200 ft. per minute.

Flat slate as well as flat ashes may be removed in this manner. From the picker the nut coal is sent to Wilmot jigs, where the balance of the slate is removed. All the material treated, whether hand picked or passed over the Ayers picker, is finally treated in the same way in the jigs.

ROUNDED COAL REFUSES TO PASS HEADS DOWN

Pea coal passing the shaker also goes to an Ayers picker, where the flat ashes and a portion of the slate is removed. It was found that when operating this picker on this size of coal a large proportion of good material was carried over with the slate. This was soon remedied by placing two boards slightly above the moving belt, at a height that would permit the slate to pass under them but would not allow the coal to follow. The slate in this size of material is thin and flat while the coal is more rounded and thicker; consequently the slate will pass through a smaller opening than will the coal. When the picker is wet, sufficient cohesion exists between the belt and the coal to carry the coal over with the slate, unless some such arrangement is made as that above described.

From the size of the breaker it seems hardly possible that such a plant and equipment have prepared as much as fifteen railroad cars of coal in one day. This, however, has been done, and quite frequently an output of as much as twelve cars is attained, while the average production is about nine cars. The building is so constructed that it can be easily taken apart and moved to another bank. Thirty men and ten boys are required to operate this breaker, and this force attains the average output of nine cars a day, as already mentioned. The culm bank where this outfit is at work is estimated to contain a total of 100,000 tons of coal.

Cloths Treated with Yellow Varnish Make Flexible, Durable Insulating Fabrics

TREATED cloths for insulating purposes are soon to be placed on the market by the General Electric Co. These are all woven from long-fiber yarn, treated by a special process to remove the nap, thus eliminating the possibility of the varnish film being penetrated by the cotton fibers, which would reduce the insulation value. This process renders it unnecessary to starch the cloth to lay the nap.

The insulation value of treated cloths depends largely upon the quality of varnish employed and the method of its application. All the varnishes used in treating these fabrics have been developed by the research laboratory of the General Electric Co. The varnishes are extremely flexible and age well under all operating conditions. The use of special machinery for impregnating the cloth makes it possible to obtain complete saturation and highly uniform coatings.

Yellow-varnished cloths are extremely flexible, have high dielectric strength, and are oil-proof, moisture and age resistant. The film imparted by yellow varnish is much harder than that produced by black varnish, and resists abrasion to a more marked degree.

Yellow-varnished materials all have practically the same qualities, varying somewhat owing to differences in the base material, which makes them adaptable for a variety of purposes. Varnished silk, for example, forms a thin, tough insulating material for use where light weight and a minimum of thickness are the prime



INSULATING AN ARMATURE COIL

After a coil is formed it must be insulated before being placed in the armature slot. The girl is applying varnished fabric insulation to one side of such an element, a service for which the material is well suited.

requisites, as in meter coils and the electric equipment of aeroplanes. Yellow-varnished cloth is a closely woven fabric treated with a high grade of yellow varnish which is baked in place, giving it a hard surface film. The other two varieties are yellow oiled muslin and oiled canvas. They are impregnated with insulating oil and oven treated to give them a hard, smooth surface. The thinner fabric is used for a large variety of purposes, such as wrapping armature coils, while the canvas is used for pads under railway-motor field coils.

Black-varnished cloths are highly flexible and have longer life under high temperatures than the yellow variety. Their oily surface renders them particularly impervious to oil and moisture, and they are preferable wherever a hard surface is not required because of their better insulating qualities. They are of three kinds, viz., a black varnished cloth of great mechanical strength, used either as a tape for wrapping armature, field and transformer coils and leads, or as a sheet for wrapping the slot portions of armature coils, and for phase insulation pads. This material exudes a greasy substance when allowed to stand, which produces a highly efficient moisture-resisting film. The second is a duck of an extremely close weave treated with a black japan of high insulating qualities, and oven cured. It is valuable for use under the binding bands of railway motors as a protective and moisture-excluding fabric. The third is a cloth similar to the first, except that it is thinner, being used to wrap the slot portion of coils.

Little Mines Make Big Profits for Owners

Small Coal Acreages on the Outskirts of Pittsburgh Are Proving to be Veritable Bonanzas—Royalties Amounting to as Much as \$5,000 Per Acre Are Being Paid to Farmers

BY DONALD J. BAKER
Wilkinsburg, Pa.

IF HORACE GREELEY were alive today he probably would alter his famous words of wisdom to "Stay East, young man; stay East!" The lure of the "yellow" as was exemplified by the rush to the Klondike

willing to attempt the burning of an inferior coal in order that his bills may be lowered. He demands that the product be black, if not very black, and that is all. Every available piece of coal land in this district



Not in Old Japan

But in the U. S. A. The coal is loaded in this cart by the miner who dumps it on the platform. It contains 16 bu. of coal and the man is given \$1.10 per cart. Don't overlook the harness by which the man is hitched to the cart like a mule. He does not mind, however, as he makes his \$15 a day.

This Is a Coal Dock

Truck drivers load their own trucks and an allowance of \$1 per ton is made on the price of the coal. The price is \$1 higher where rude chutes have been constructed and where the coal is loaded in the truck bed by gravity. This "plant" brings the farmer who owns the land about \$50 per day.



regions is a tame means of making money when compared to working a small patch of coal on the outskirts of a large city.

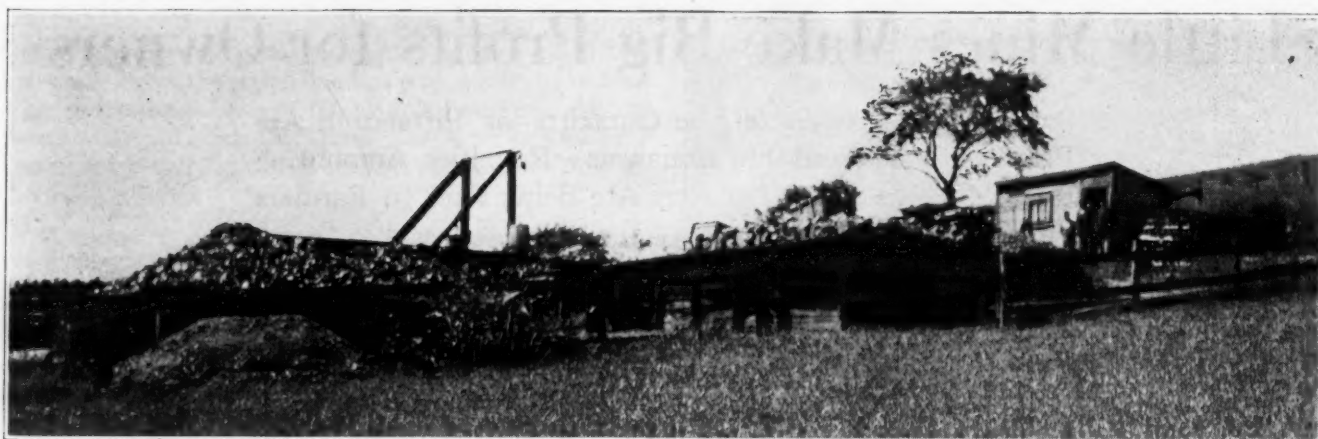
With the recent establishment of new high-price levels in the spot market small coal acreages in the Pittsburgh region have proved to be highly profitable investments. The Sandy Creek district, which is that section of country contiguous to the borough of Wilkinsburg, has witnessed within the last eight months the springing up of innumerable country banks. As in the early days of the California gold rush, the hillsides are dotted with chutes and tipples as were the mountains of the West when it was said that "prospect holes could be counted by the hundreds with a single sweep of the eye."

Though not given the publicity that attended the "mad march for gas" upon the McKeesport field a year ago, the excitement that attends the opening of a drift among those engaged in the business is no less intense than was caused by the erection of a new drill rig in the former district. Coal formerly deemed worthless is being mined and brought to the surface, where it is eagerly snapped up by waiting truck drivers. The domestic consumer of today is in dire straits and is

from one acre in size upward has either been purchased outright or is being developed on a royalty basis. Farmers owning small patches of coal whose areas are clearly defined by outcrop limits have suddenly awakened to the fact that they can set their own price on their land. Most of these men never before entertained visions of realizing anything on their coal, and yet in some instances the royalties being paid for such mineral rights will aggregate nearly \$5,000 an acre.

In many cases three parties are financially interested in the coal bank, namely, the farmer, the operators—who quite often are the miners themselves—and the truck drivers. Each class appears to be making money. The operators experience little difficulty in disposing of their product at \$5 per ton to waiting truck drivers, after having paid the owner \$1 a ton royalty for the privilege of developing the mine. The coal is then hauled by truck and sold to domestic consumers at a figure that will perhaps average about \$8 a ton.

In most instances the coal is of the "crop" variety and quite rusty. Carelessly mined and given no preparation at all, the domestic consumer, nevertheless, sees in it a means of sidestepping the prices now paid at the larger mines, which run from \$10 to \$12 a ton.



GENERAL VIEW OF THE THORNE COLLIERY, SANDY CREEK DISTRICT, NEAR WILKINSBURG, PA.
It seems hard to believe that such plants exist, do business and make money in the year of grace 1920, but they do, and they will continue in business so long as prices remain high, which means so long as the railroads continue to be so beset that they cannot buy the necessary cars and locomotives.

The accompanying illustrations depict scenes around the "plant"—if such an expression may be pardoned—at Thorne's Farm, near the high point in the Frankstown Road, just outside of Brushton. Five miners are employed by the operator, who in this instance is the man owning the coal. Transportation from the face to the "tipple" is accomplished by means of specially constructed carts each holding 16 bushels of coal. The men are paid \$1.10 per cartload, which figure includes the labor necessary for moving the cart to the surface. By utilizing carts, as in the early days of the industry, the operators are able to open a bank with a minimum of capital. The majority of the new openings, however, are equipped with second-hand cars and light rails. The picture showing the primitive cart in operation is interesting in that it was taken in a district famed today for its modern mining equipment.

Little trouble seems to be experienced by the operators in getting men to work in these operations, despite the fact that none of the mines, of course, is electrified, and the coal must be extracted by the use of the pick. A higher wage is paid the men than is demanded by the regular union scale, although there is little real ground for a just comparison of prices because of the great difference between the working conditions which exist

in these mines and in the large operations of the Pittsburgh district.

To the older readers of *Coal Age* the methods of mining employed in these operations will recall those followed in the early days of the industry. In some places from eight to ten inches of coal is left on the floor because to take it up would involve going to the dip. Two wide planks laid loosely on the floor serve as rails for the easy movement of the carts. Rooms are driven directly off the main entry. No surveys are made and no maps drawn.

All in all, hit-and-miss methods are quite generally adopted. By reason of the small amount of cover over the coal, caves are frequent. Hence it is not necessary to use fans in ventilating the workings. In some of the larger operations underground furnaces have been constructed with a shaft leading to the surface.

When the loaded carts are brought to the drift mouth they are dumped by the miners onto a loading platform, as is shown in one of the illustrations. Truck drivers are forced to load their vehicles by hand in this case. When the banks are equipped with rough chutes the operators are able to demand \$1 a ton more for their product, as in that case less time is lost in loading.

With the increased freight rates now provided, operators are studying the motor truck as an economical method of transportation for short hauls. Sometime ago I made the statement that the tipples of large producers would be so altered in design in the near future as to permit the loading of trucks with the same ease as is now experienced in filling railroad cars. It is expected that *Coal Age* will soon publish a description of a tipple designed for a large output wherein the motor truck may be filled and dispatched with much the same ease and precision as the railroad car. The first of its type to be erected in the Pittsburgh district; it will soon be but one of many.

Costs of operating motor trucks over short hauls no longer appear prohibitive. Thanks to small operations, such as the one here described, where trucks have been used by necessity, this means of transportation has been put to severe test. That the truck has not been found wanting is attested by the willingness of at least one of the larger operators to construct tipples specially equipped to ship by truck in large quantities. It will be interesting to follow the development of this newly recognized coal-transporting agency during the next few years. Predictions which when they were made appeared fanciful are soon to become realities.



MINE MOUTH JUST LARGE ENOUGH FOR CART

Note the planked floor for the carts to run on. It will be seen with what a notable economy timber is being used. Such openings as these are not intended to last more than a year or so.

Mine Safety Experts Discuss at Milwaukee Accidents, Health and Welfare—II

Examination of Hoisting Engineers—Dangers on Slopes—Failure of Dogs—Cage Signals and Their Advantages—Conduct of Mine-Rescue Work—Training of Apparatus Men—Use of Stenches and of Other Danger Signals

BY R. DAWSON HALL
New York City, N. Y.

ONE of the most important of the articles submitted to the Mining Section of the National Safety Council was that of L. F. Mitten, engineer of the Vulcan Iron Works, at Wilkes-Barre, Pa. The subject was "Safety Devices on Hoisting Engines." It is useless to attempt to publish it in brief as it fully deserves a far more complete reproduction. However, the discussion, which was not so intimately bound up with paper as to be unintelligible apart from it, may be presented in this article.

Mr. Mitten ascribes hoisting accidents to three causes: Failure of hoist to function, failure of hoisting engineer, failure of hoist from defective material or workmanship. Horace F. Lunt, of the State Bureau of Mines, Denver, Col., said that in Utah a physical examination was made of all men seeking to run hoists. An investigation of the men being employed revealed one man who was so deaf that he could not hear the signal bell on the hoist and was obliged to rely on seeing the clapper move to learn what signals were being made.

Martin J. Flyzik of the State Safety Board, Olympia, Wash., said that in that state he had required a rigid inspection before hoists were used, a reduction in the speed of hoisting, man trips for the sole purpose of hoisting men, cables around trips on slopes and physical examination of the hoist engineer. He said that some operators argued that inquiry into the personal fitness of the men was wrong as it prevented the awarding of the work as engineer to men whose services warranted their promotion.

WHY SOME OPPOSE PHYSICAL EXAMINATION

The operators argued that good and faithful men deserved the promotion even if they could not pass the examination. He held that the safety of men being hoisted was a paramount consideration with which principles of promotion should never be allowed to conflict. He declared that not only must men be physically fit but they must also be temperamentally suited to the job. A quarrelsome man might wreck a hoist and injure life if he allowed his temper to sway him over home quarrels or differences with persons on the job. He instanced one case where a difference at home made the engineer petulant when running the hoist, with the result that he caused an accident.

William Conibear, of the Cleveland-Cliffs Iron Co.,

Ishpeming, Mich., said that at all their plants cageriders took care of the safety of the men and he strongly recommended their employment. H. F. Lunt said that he was desirous of learning of a safe device for stopping cars on a steep incline should the rope part, and he added that even in a vertical shaft the problem was not satisfactorily solved because if the rope was severed several feet above a cage the dogs refused to engage the guides with the degree of violence necessary for sustaining the cage. The rope had too much inertia and was sustained partly by striking the timbers as it fell. It accordingly held back the dogs from performing in any but a perfunctory way the work they had to perform.

During the coming year the Mining Section of the National Safety Council hopes that it will secure the co-operation of the Bureau of Mines in providing a permanent secretary for the section. Without someone to take a continuous and exclusive interest in the safety work of the organization, progress in the safety program of the Mining Section is likely to be slow and beset with difficulties.

B. F. Tillson said he thought that in all cases arrangement should be made for "bucking the motor," that is, reversing the direction of the current through it, should the brakes, through wear or other cause, fail to operate satisfactorily. Provision would have to be made, however, that the surge of current resulting therefrom would not throw the current entirely off the motor.

ARE STEEL GUIDES IN SHAFTS SUCCESSFUL

Sim C. Reynolds desired to know whether steel guides had proved satisfactory. He felt they might avert the difficulty arising from the fact that if the cage falls the dogs are apt to strip out the guides. William Conibear stated that in one of the shafts of the Cleveland-Cliffs Iron Co. steel guides were used with runners on the skips. They had been found to give much trouble.

John T. Bradley, of W. J. Rainey Co., Uniontown, Pa., said that a dummy having heavy I-beams had been used on a steep incline. It was arranged that when the speed exceeded six miles per hour a governor threw out dogs which would wreck the trip. The men were kept well back of the dummy.

Following this discussion the paper of C. A. Allen, division engineer of the Bureau of Mines and chief mine inspector for the Industrial Commission of Utah, was presented. It was entitled "Signaling to and Controlling Mine Hoists from Moving Cages." This paper does not bear briefing, and consequently is entirely omitted in this record of the meeting.

William Conibear said he was opposed to anyone on the cage having the power to interfere with the hoisting. Dan Harrington, however, took the opposite stand. He

said that this ability to signal to the surface would be extremely helpful in mine fires. At the sadly celebrated North Butte fire, men were lowered down the shaft to attempt a rescue. They had no means of signaling from the cage, and the regular signals at the landing to which they were lowered were burned out. They could not signal that their help was vain and they were left down there to burn to death. When the cage was raised, the men were dead. Surely in this case, he said, it would have been desirable to have some means of signaling to the surface.

Orr Woodburn said that it was provided at Miami that the signaling could be done only when the cage was 25 ft. or thereabouts from the landing. R. H. Seip said that at the New Jersey Zinc Co.'s mine it was arranged that only the cage tender with a key could signal unless the man at the landing considered the occasion important enough for him to break a glass which protected an emergency signal. H. F. Lunt said that fifteen or twenty years ago the Cripple Creek shafts had used two wires in each shaft for signaling from the cage. He knew that this was not the case today, but he could not say why. Perhaps when they went out of repair their use was discontinued.

J. W. Reed said he was much interested in the matter. Suppose the cage left the guides, would it not be well to have some way of halting the cage before damage was done? W. W. Gidley was one of the doubters. His corporation—Phelps-Dodge—had not had a single fatal accident in their shafts for sixteen years. He did not believe in having too many wires in the shaft, and he felt that if anything went wrong, most men would not have enough presence of mind to operate the device.

IN GLOBE REGION CAGES HAVE TELEPHONES

Orr Woodburn declared that such cage signals were undoubtedly of value, as Harrington had declared. They were needed in wrecks and fires. In the Globe region telephones are being installed with reels on the cage for winding up the wire. Mr. Harrington asked whether, in case the cage loosened some timbers, it would not be well to have a means of preventing any further damage whereby the men on the cage might be killed. He related a case where a sick man fell when getting on the cage. The cage started and he was caught between the shaft and the cage platform. The hoist could not be stopped, for there was no cage signaling device.

Sim C. Reynolds said that in shallow coal shafts the men could shout up to the surface and use other means of attracting attention. B. F. Tillson recounted coming down on a man in the sump and being totally unable to stop the descent of the cage, as no cage signals were provided.

He said, however, that he did not approve of the practice described in Mr. Allen's paper of making a return through the hoisting rope, as the current would be apt to cause electrolysis and thus weaken it.

In the afternoon no session was held. A large number of men went to the Cutler-Hammer plant, where all kinds of switches and controllers are made. The company gave the members a good opportunity to see all the details of switch manufacture.

LOADING MACHINE WITH BELT AND BUCKETS

Some others went to see a model of a new loading machine for mines invented by H. S. Hunt, chief engineer of the Milwaukee Coke & Gas Co. The machine itself weighs eight tons and is 21 ft. long. The loading

buckets in the front of the machine will lift over a ton. They are constrained to follow a roughly circular cam-directed course of such a character that they dump and are pulled back so as to clear the belt, which passes up at a 19-deg. slope, delivering the coal to a car at the rear over which that end of the machine overhangs. The device is so arranged that the virtual centre for its turning is not the point on which it turns but the rear end of the machine. Hence the dumping point is practically fixed over the car, no matter where the shovel is loading. The machine is only 36 in. high. Another shovel is being made of the same height, but it is only half as long and half as heavy.

One machine has been made up to the present. This was used at the Weeksbury-Powellton mine of the Elkhorn-Piney Coal Co. and is now working at the Mayville mine of the Steel and Tube Co. of America, loading iron ore. It loads a car in 31 sec., and in eight hours of actual running has filled 116 cars, each holding 2½ tons, handling large chunks of ore. E. S. O'Connor, the manager of the Mayville mine, who got the party together and took the engineers down to see the shovel, is quite enthusiastic about its performance.

AIR FOR AVOIDANCE OF GAS EXPLOSIONS

The first paper to be considered at the third session, held on Thursday morning, was that by R. A. Walter, general superintendent Wisconsin Steel Co.'s coal mines, Benham, Ky. Mr. Walter in his paper, which was read by Mr. Tillson, said that "150 cu.ft. of air per min. should be provided at the working face for every man and 500 cu.ft. for every mule, with such further volumes as may be necessary to dilute to a half of one per cent the gas in individual splits and to one-third of one per cent the gas content in the entire return of the mine. There should be two separate drives, preferably from entirely different sources of power. Clutches should be provided outside the fan chamber so arranged that not over five minutes will be required to change from one drive to the other. As this address will be printed in a later issue of *Coal Age*, no further quotations from it will be made.

WILL GAS MAKE HARD-COAL DUST EXPLODE?

H. H. Stoek, referring to Mr. Walter's declaration that where one per cent of gas was present the temperature at which coal dust would ignite was lowered, said that many reports had been spread that anthracite, which would not explode in pure air, would do so where one per cent of methane was present and that the experiments at the experimental mine clearly exhibited that fact. He thought it a pity that the information obtained by the Bureau of Mines relative to that subject had not been made public.

Later in the afternoon reference was made to Mr. Walter's statements that an electric drive did not assure operation at all times. There was a possibility of the cutting off of the electric current. Someone remarked that to this end it was a law in some states that two entire separate sources of power must be provided. On Mr. Tillson remarking that this would be quite expensive if it was necessary to put in a standby boiler and steam engine and keep the boiler constantly in operation pending such a failure of the electric current, C. A. Herbert of the U. S. Bureau of Mines, Vincennes, Ind., remarked that at most plants a supplementary source of power was found in the boiler that supplied steam for the washhouse. This, however,

did not furnish enough steam to keep the fan going at its accustomed rate of speed. Mr. Tillson believed that the prime mover which the condition indicated as best was an internal-combustion engine, which would not make necessary the erection, maintenance and continued firing of a boiler.

Mr. Tillson said that George S. Rice had assured him that anthracite dust would not explode, and in consequence he had installed a powdered-coal crusher at Franklin Furnace close by the boilers and there had been no symptom of trouble. He was extremely doubtful at first, because of the terrible explosions taking place in the anthracite mines of Wales. A member explained that the British use the word "anthracite"



C. F. Tolman

The New President of the Safety Council

Indefatigable as a worker, well equipped as an engineer, patient in research, Mr. Tolman represents the spirit of enterprise that so builds safety into a plant that emotional and inspirational safety work will relate to a mere fraction of the inherent dangers. Why discuss moral hazards until the mechanical devices have done their utmost to render accidents impossible?

more broadly than do Americans. In Great Britain the New River and Pocahontas coal would be considered anthracite. It is well to know that the dust of these coals will explode most violently.

B. F. Tillson said that it was all very well to talk of designing fans to meet the necessity for a given water gage, but what water gage was necessary? He was unable to ascertain that fact as the authorities were so contradictory when they came to discuss coefficients of friction.

Mr. Harrington in reply said that in his opinion it was extremely difficult to fix on any given coefficient. The Anaconda Copper Mining Co. had been making experiments at Butte, Mont., on the resistance of mine shafts to the passage of air and had discussed whether it paid to line a shaft with cement mortar or concrete. To ascertain the value of a smooth lining they had sunk three shafts each 150 ft. deep.

One was rectangular and unlined, one rectangular and lined with cement mortar and one circular and similarly lined. All were of equal cross-section. With a given water gage the second shaft passed 1.9 times as much air as the first, and the third 3.3 times as much. The company will sink a shaft solely for the passage of air. It will be 2,800 ft. deep and it will be lined by the cement gun with gunite. It is to pass 350,000 to 400,000 cu.ft. of air per minute.

Martin J. Flyzik declared that he believed that the industry should be the recipient of more information from the Bureau of Mines relative to specific mine accidents. He knew that the engineers of the bureau made careful reports of all the more important disasters to the chief mining engineer, but he also knew that these reports did not go to the public. He well understood that a veil of secrecy had to be maintained so long as damage suits might be instituted, but now, seeing that the operator had to pay compensation whether negligent or not and regardless of any of the old common-law defenses, the operator had no interest to serve in secrecy and could not object any longer to a critical analysis by the bureau's investigators.

Following this discussion Joseph J. Walsh's paper on "General Rules for Gas Explosion Prevention in Anthracite Coal Mines" was read by Mr. Tillson. Mr. Walsh is district state mine inspector at Nanticoke, Pa. Mr. Harrington declared that accidents continued to happen despite the use of permissible explosives. The operators at three mines where such explosives probably caused explosions were at a loss to explain what caused them. Samples of the explosives were sent to Pittsburgh for examination. They proved to fill the standard requirements of safety. Inquiry showed, however, that the men at the mines where the explosions took place were using 7 to 8 lb. of explosives instead of 1½ lb., which was the charge limit. No permissible explosive is safe when used in such excessive quantity.

WANT MINE AS WELL PROTECTED AS SURFACE

The discussion of Mr. Walsh's paper was followed by the reading by the authors, Orr Woodburn, director, Globe-Miami District Mine Rescue and First-Aid Association, Globe, Ariz., and R. H. Seip, safety engineer, the New Jersey Zinc Co., of Franklin, N. J., of two papers entitled "Mine Rescue and Recovery Operations" and "Requirements of Rescue Training for Metal Miners" respectively.

Among other interesting matters, Mr. Woodburn said: "Every surface dwelling and building [at the mines] is fully insured and protected by a separate system of fire lines, hose boxes, fire extinguishers, central-hose station, and probably an alarm system. All of these are inspected by insurance representatives and kept up to the requirements by the operating departments as a part of the regular routine. All of this is to protect buildings that are fully insured.

"Within the mine insurance is not feasible and yet the hazard of fire is just as great, not to mention the much greater danger to life, and no such complete separate fire system is maintained. Not as much provision is made for the protection of a valuable stope as is made to protect fully insured surface buildings. The rescue crews must nearly always depend on water lines that are converted from air lines by cross-sections with a water supply, and probably make openings in the pipe where needed. Pipe lines of proper size must many times be laid and hose carried to the place. The

surface building has at least one fire extinguisher and a fire hydrant with available hose at a specified distance.

"With these facts in mind regarding the existing conditions it is hoped that every mining operation will face the situation squarely and provide as complete a fire system for the underground workings as is provided on the surface. By so doing fires could be extinguished at their inception, and serious fires from accidental means would be of rare occurrence.

"An almost general belief exists that the purchase of new oxygen breathing apparatus eliminates all of the evils of defective or questionable equipment. The new apparatus will not give the results expected unless it is kept in proper condition and this condition is proven by frequent use. No equipment can be expected to serve as intended unless kept in proper condition. If the old apparatus did not give proper service the same can be expected of the new. Storing it in a special cabinet and testing it at frequent intervals does not insure its safe condition for use. The proof of the condition is the wearing, and the more often it is worn the longer the life of the rubber parts.

"Often recharges and spare parts are not kept in sufficient amounts. The continuous use of all apparatus for thirty-six hours would exhaust the recharges of most plants. With the numerous strikes and freight embargoes it is important to maintain a high minimum regardless of the geographical location of the plant. A supply that will permit of 100 hours, or, better still, 150 hours, is advisable, especially as the advantage of borrowing from adjacent plants has been limited through the increased number of models of apparatus in use. The high minimum of supplies only requires a greater investment, as there is no deterioration or increased consumption.

ADVISES LARGE USE OF HALF-HOUR APPARATUS

"One of the serious drawbacks in the use of oxygen apparatus is the time required to get the crews equipped and into action. The history of all fires shows that the critical period for life and property is during the first few hours, and of that time the first thirty minutes is the most important. Providing cabinets with sets of half-hour oxygen apparatus that can be used by anyone without special training, with a complete set of emergency tools, carbon tetrachloride extinguishers, pipe fittings, etc., has proven to be of great value. This will make immediate action possible, and if a small fire is encountered it may be extinguished.

"By this advance force the location and extent of the area involved, together with the conditions existing, can be ascertained, so that when the heavy apparatus crews are ready they can go about the work intelligently. This light equipment is of great value in the further exploration and inspection work.

"Mine-rescue, first-aid and mine-fire prevention work is a most important part of mining operations and should be in charge of a specialist or a department specially created to take care of this work to the exclusion of all other. Where such work is made the part-time duty of someone, no matter how able he may be, the work is not satisfactorily performed, for he will regard it as only a side line and the outcome will be evident when an emergency arises. Where there are several plants within reasonable distances all apparatus should be pooled and a central mine rescue station established. With a large and efficient organization, com-

pletely equipped at a lower cost per company, the best possible service can be depended upon. By distributing the cost per company on the basis of the average number of employees, the smallest plant will have just as complete protection as the largest and at a cost that is not prohibitive.

STANDARDIZE ALL PIPE OPENINGS IN MINE

"Experience around fires has shown that large quantities of fire hose are needed if sufficient water is to be put on the fire without delay. All hose and pipe openings for fire use in the mine should be of the same size as the regular air hose in use and standardized to insure prompt use. If more lines and volume of water are required this can be arranged for in a reasonable time, provided a record is kept of the size and location of all surface fire hose.

"Fire doors should be so placed that fire may be quickly isolated and materials available for the temporary sealing off of the fire area. Cement guns are of great value in the permanent and efficient sealing off of any mine fire.

"All of the labor connected with the fighting of fire should be done as far as possible by the fresh-air men, who may be assisted and protected by the oxygen-apparatus crews. This can be done by building up air pressure with portable blowers.

"The value of special trucks with blowers and flexible piping and also large fire extinguishers with long hose cannot be placed too high. When 300 ft. of flexible pipe can be installed in an hour and its cost is moderate and it occupies such a small space in storage its use is to be highly recommended. Some of the materials used in making this pipe are highly flammable, and this must be considered in purchasing that material.

"Signal systems to call all the men out of the mine should be provided, and it would be well to have such systems standardized, at least in each district and, better still, nationally. Flashing signals on the electric circuits is apparently the most feasible and usual method.

"At times of fire and disaster it is of paramount importance to place one man at the scene of operations and another on the surface, through whom all orders must go. Each should keep a complete record of every order, its time, by whom and to whom transmitted, thereby providing a valuable and reliable source of information, saving much duplication and delay. Every boss and official should be instructed, and notices should be posted throughout the mine as to general rules to be followed in case of mine fires."

MEN MATERIAL VITAL AS APPARATUS MATERIAL

From Mr. Seip's remarks the following paragraphs may be taken:

"Obviously, it is of vast importance that the qualities of the men to be selected for places on rescue crews should be given careful consideration. It is just as essential to have physical fitness in rescue or recovery work as it is to have mechanical fitness in the type of apparatus used. Each of these factors is dependent on the other, and each without the other is dangerous, not only to the one man but to the entire crew. Therefore each candidate should be subjected to a thorough physical examination prior to any instruction.

"An examination given at this time saves not only money for the company but often embarrassment on the part of a man forced, by physical unfitness, to discon-

tinue the course of training. This examination should, of course, be made by a physician or surgeon. If the surgeon be in the employ of the company he will doubtless be familiar with the nature of the training and will conduct his examination accordingly.

"In addition to the general physical condition of the candidate, special attention should be paid to the condition of the nose, throat and lungs. Also, in consideration of the strenuous nature of the work and the prevalence of hernia among workmen, this important point should not be overlooked in the examination. Systolic blood pressure also should receive careful consideration, as high-blood pressure induces vertigo and dizziness.

PREFERENCE GIVEN TO SHORT AND HUSKY

"There are other features also to be considered in the selection of men for training. It would be natural to suppose that men of large stature and corresponding strength would be the best fitted to wear apparatus, yet most of us know that this is not so. Experience has shown that men of average height and weight are able



R. C. Richards

Retiring president, National Safety Council

Mr. Richards, who is chairman of the Central Safety Committee of the Chicago & Northwestern Railway Co., is the man who is mostly responsible for the safety work on railroads. He it was who first realized that the way to promote safety on railroad systems was by making the subject a specialty. There is a human element in safety, and surely no warmer heart or more brightly beaming eye than that of Mr. Richards was ever devoted to the humanizing of that industry. He was present to open the meeting, but was taken sick soon after and was not able to attend the banquet.



S. J. Williams

Secretary and chief engineer, National Safety Council

The council work is not merely to hold an annual congress and, after that is over to do nothing for another year. Its function is to serve the industry with advice, information and bulletins. Mr. Williams is the source from which much of that service comes to members either directly or indirectly.

to handle themselves to better advantage while wearing apparatus than taller and heavier men.

RESCUE MEN SHOULD BE MENTALLY FITTED

"Inasmuch as a considerable part of actual emergency work with apparatus is dependent upon the absolute understanding and execution of instructions, men who are to be selected for the training should be mentally as well as physically efficient. This statement does not imply that the candidate should be highly educated, but, as Mr. Luke Keating, mine rescue foreman for the Lehigh Valley Coal Co., in his article on 'Picking Men for Mine-Rescue Training' has stated, 'Training in mine-rescue work should *not* be required to include a course of instruction in English.'

"All candidates should be thoroughly familiar with the mine workings and should know the conditions existing in each level and ladder-way. It also is important that they should be able to do any of the various kinds of work underground that might be necessary, such as timbering, constructing brattices, drilling, mucking, etc.

"There are certain phases of the mental fitness of the men that sometimes cannot be determined until later in the training period. These phases involve the coolness with which they are able to act in dangerous

atmospheres, the steadiness of their nerves, the excellence of their judgment and their ability to maintain their mental poise. Men who become easily excited or panic-stricken should be eliminated from the crews as rapidly as these symptoms become apparent.

"Furthermore, rescue work is not the most pleasant occupation that men engage in, and comparatively few men desire to undertake it. At best it is a hazardous occupation, so that men should not be coerced into taking the training. Every man to be trained should be a volunteer in the sense that he does not do the work against his will. The man who is forced into the work may at some time bring disaster to his crew due to the mental deficiency resulting from fear or other causes.

SHOULD RESCUE MEN BE TRAINED IN MINE?

"With apparatus and men selected, the next thing to be considered is the place of training. Upon this subject there is a diversity of opinion. The preliminary instructions must, of necessity, be given on the surface, so that any room large enough to accommodate the number of men in training will serve this purpose. Also, the first couple of days can be spent in the open air until the men become familiar with the apparatus and 'get the feel' of it while wearing it in the preliminary work.

"Following this period many instructors then take the crew into the mine for further practice. Whether or not this is advisable is an open question. I do not believe it to be essential. The course of training is for the purpose of teaching the men something entirely new—a phase of mining work that requires courage and one that is not without hazards. Therefore, the work must be done in a manner and under conditions that will instill in the men absolute confidence in their machines and in their ability to use them. It is of course important that they should be able to carry on their work under the same conditions as exist underground. To this end the training chamber, or smoke room, should be constructed so as to meet the conditions, and most metal-mine conditions can, with little work, be represented in the smoke room."

Mr. Seip then described in detail the smoke room with its equipment, slopes, timbered roadways, etc., and added that double doors were provided "on one side open to the outside of the building. These doors are equipped with electric door openers which may be operated from the apparatus room or the observation chamber. The doors are counter-weighted so that their operation in opening is entirely automatic. This feature, in addition to a window in the upper part of the building operated by a rope, provides for rapid removal of fumes in emergency.

DO NOT PERMIT TRAINED MEN TO FORGET

"It is natural that in the training period many unforeseen things will occur that the men will not understand. Reducing valves will require adjustment, bypass valves will accidentally become opened, men will over-exert themselves, etc. It is the duty of the instructor to explain carefully the reasons for all such occurrences and tell the men how they may correct or prevent them. Too much importance cannot be attached to the method of instruction, for the value of the candidate as an efficient rescue man is almost entirely dependent upon the confidence in his instructor and in his appa-

ratus which the neophyte gains at the beginning of the course.

"The cost of the preliminary training of but five men is not a small item and is increased directly as the number of men trained is increased. Yet, if this preliminary training is to constitute entirely effort on the part of the company, the money spent has been a poor investment. Most of us know how easy it is to forget simple first-aid training, provided we do not continually practice along those lines. For this reason first-aid contests have been inaugurated to stimulate practice in first-aid work.

"It would, therefore, seem advisable that a half day each month be allotted to each rescue crew for practice. In these periods the apparatus should be worn at least one and one-half hours and the work should be varied so as not to become monotonous. In case of the loss of members of the crew by resignation new men should be added, but they should receive individual instruction, provided there are but one or two vacancies. This method should not be employed if there is any opportunity to train new men as a crew, as better results obtain than from individual training.

DIFFICULTY IN SECURING MINE-RESCUE MEN

In the discussion of the two papers that followed their presentation John T. Bradley, of the W. J. Rainey Co., Uniontown, Pa., said that the Connellsville companies found it hard to secure quotas for rescue teams. Mr. Woodburn said there was no trouble in the Globe-Miami district, where 25c. per day additional was paid to those who were enrolled as rescue men. J. T. Ryan, of Pittsburgh, said that where full pay was given for practice plus \$5 a day extra for actual rescue and recovery work there was no difficulty in securing the necessary force.

Speaking about the undoubted advantage of carbon tetrachloride, Mr. Woodburn said that when a fire in a winze was so located as to be unapproachable several gallons of the compound were poured down it and nothing further was done. For months they were unable to reach the place. When they did it was found that the timbers were burned half through, but the tetrachloride had done its work and extinguished the fire completely and at but little cost considering the valuable work performed.

WARNS AGAINST MINING EQUIPMENT

Martin J. Flyzik asked whether the advice against mixing equipment in the outfitting of a team working together had the approval of those who were skilled in the use of oxygen breathing apparatus, and Dan Harrington replied that it was not well to assemble men using automatic feed apparatus with men equipped with apparatus having a fixed feed. The men using the first type would work in accord with the wider limits of their apparatus and the men with a fixed feed would use their bypasses to excess and soon exceed the ability of their apparatus.

Mr. Woodburn declared that he would like to see fire extinguishers in every stope. So far he had been unable to get the mining companies to provide them. There was always a risk that they would be broken by shots and then again it was hard to keep them distributed.

(To be continued next week)



Discussion by Readers

Edited by
James T. Beard

To Reduce Cost in Low Coal

Numerous points that have an important bearing on the cost of working low coal are often overlooked or, if brought to mind, are completely disregarded.

WHEN reading the inquiry of L. E. R., *Coal Age*, Aug. 19, p. 403, regarding the best method to be adopted in the working of a 32-in. to 35-in. seam of coal, a few points occur to me that may prove of value to the inquirer and others similarly interested:

First, I will assume that the coal is horizontal or nearly so. Probably mining machines are used as the mine is said to be well equipped. If gathering motors are employed, as I may suppose, and these enter the rooms the butt entries should be turned as far apart as possible, having due regard to the roof conditions and the practical working of the coal, all of which influence the length of the rooms. My purpose in making this remark is that since the work in low seams is expensive every advantage should be taken to increase the tonnage per yard of entry driven.

POINTS WORTHY OF ATTENTION AS AFFECTING COST OF WORKING

It is stated that bottom is being lifted to gain height on the roads. This would have the disadvantage of causing a considerable grade at the mouth of each room. My preference would be to rip the top to provide the necessary headroom; but, as stated in the reply to the inquiry, this will depend on the nature of the roof and may not be practicable.

It is further stated that the rooms are driven on 60 ft. centers, and, assuming they are of good width, this would indicate a fair roof. In that case, it would be possible to drive the entries 12 or 14 ft. wide and gob the refuse behind a row of posts, at the side of the road, instead of hauling it to the surface. Such a plan will not only avoid the necessity of paying yardage, but a single cut will throw down a fair day's work for the loader and give cheaper coal.

Judging from the sketch on page 403, the rooms are necked for laying the track along the rib. While this is good practice, and makes it easy to load the pillar coal in robbing, it may prove a disadvantage in loading the coal at the face when driving up the rooms, owing to the distance a miner must handle his coal, in this thin seam.

My experience leads me to conclude that it will be difficult to hold a full crew of miners under these conditions, without paying a high scale or making other allowances. To avoid this trouble, in working a thin seam, it is often preferable to lay the track up the center of the room and thus divide the distance the coal must be handled at the face.

One further suggestion has reference to the width of crosscuts or breakthroughs. Under a fairly good roof, in low coal, it is possible to avoid the expense of nar-

row work by making the breakthroughs and crosscuts wider. These are a few points that have occurred to me in reading over this article, and their observance will often seriously affect the cost-sheet.

Morgantown, W. Va.

M. L. O'NEALE.

Handling and Transporting Explosives

The terrible disaster that occurred some time ago in the Baltimore Tunnel raises the important question as to what is the safest method to adopt for carrying explosives into the mine.

WHAT is the safest means or method of handling and transporting explosives underground is the question that arises in one's mind after reading the article entitled "Many Men Have Kegs of Powder," commenting on the Baltimore Tunnel disaster, *Coal Age*, July 8, p. 50. The conclusion reached in that article seems to be that the safest plan is for each man to carry his own explosives into the mine. It would be interesting to have the opinions of many on this question.

At our mines a principal magazine of fire- and bullet-proof construction is located at a distance from the mine and other buildings where a possible explosion would not be likely to endanger anyone or damage property. A small distributing magazine is located within convenient distance of the mine and is only large enough to hold a day's supply of powder.

A thoroughly competent and reliable person is in charge of providing the powder for the day and distributing the explosives to the men, each morning, as they are about to enter the mine. At the gate, some distance from the magazine, is a conspicuous sign warning everyone to keep light and fire away. Nothing but electric lights are used for illumination.

CARRYING EXPLOSIVES SAFELY INTO THE MINE

The amount of explosive required by each man for his day's work is placed in a container made of fiber. Each container is in good condition and has a top or cover that protects the contents. On entering the mine the men go to their several working places, each carrying his explosives in his container, which he is instructed to put in a safe place before proceeding to work.

However, I realize that the development of a mine makes the distance a man must travel to reach the live workings more than what he can conveniently walk. Moreover, it is often the case that no good traveling-ways are provided and a man must take his chances on the haulage road, which is particularly dangerous where the mine is electrically equipped, even though the distance to be traveled is not great. These conditions often lead a miner to look for work in mines having a smaller development or where these dangerous and burdensome conditions do not prevail.

In order to hold his men, many an operator is compelled to arrange some way of hauling the powder into the mine, either in a separate car or in one attached to the mantrip carrying the men, as was reported to have been the case in the Baltimore colliery disaster. The question I would like to see discussed in *Coal Age* is: What is the safest way of going about this hazardous undertaking of conveying the powder when the men are hauled to and from their work each day.

Pikeville, Ky.

G. E. DAUGHERTY.

Why Contract Mining Is Not More Common

The numerous arguments that are frequently advanced against the contract system of mining coal have, for the most part, no foundation. That this system of mining is not more popular is because the jealousy of the mine foreman is aroused when he sees the contractor making more money than himself.

ONE who is familiar with the working of the contract system in coal mining can hardly avoid a feeling of surprise when reading such arguments as are advanced by John W. Jones in his letter, *Coal Age*, Aug. 19, p. 400; and the statements made by Henry Bock, page 402, of the same issue.

The former of these two writers argues that the desire of the contractor to mine a large quantity of cheap coal will cause him to rob the pillars, which can only result in a large loss of coal. The second writer, Mr. Bock, claims that the contract system puts a premium on brutal strength and discounts all efforts to secure safety and compliance with the law.

When working a contract myself for seven months and employing an average of 14 men daily there was but one accident and that was due to the man's own carelessness. As is well known, at the present time about 20 per cent of the miners employed are experienced men. The remaining 80 per cent are those who float from one job to another and must be closely watched to avoid accidents. Under these conditions the contract system, which insures a more careful supervision of the work, renders accidents less frequent.

MINE OFFICIALS ARE RESPONSIBLE FOR ANY VIOLATION OF LAW BY A CONTRACTOR

Speaking of the disregard of contractors for mining laws and mine regulations, it is hard to understand how a mine foreman or his superintendent would permit a contractor to violate any requirement of the law or fail to observe safety regulations. Certain it is that the superintendent or the foreman would be responsible in case of accident, as the mine is in their charge and under their control. No competent superintendent would consider a contractor in the same light as a mine foreman, or regard him as equally responsible. He would hold the foreman to account for any accident that might happen, or for any loss of coal due to improper mining.

A contractor is no more than a miner and should be compelled to respect both the mining law and the mine regulations. Without this no system of mining is practical, as questions of safety would become a secondary consideration. Though appearing to have a high regard for safety in mining, Mr. Bock seemingly fails to appreciate the advantage of the close supervision possible in contract mining.

There is one argument that no one can deny; namely, the fact that contract mining run on a safe and sane

policy will increase production. In one instance, for example, the men working in a mine in this region were given on an average four cars, per man, per day. Under the contract system adopted in that mine a little later, the average turn was eight cars, per man, per day, an increase of 100 per cent.

Another instance that came under my observation showed an increase of 200 per cent in the advance work of driving the headings. At the same time there was a reduction of 50 per cent in the accident list in that mine. My experience is that men are more satisfied, work more steadily and are more efficient in contract work than when employed in the usual manner by the company.

Foremen who have dealt with contract work will readily admit that they are never obliged to promise anything in order to get their men to work and there is no grumbling about yardage or deadwork so common at other times. In fact, there is no more ideal condition than working by the contract system when the superintendent, foreman and contractor pull together and each performs his regular duties and there is real co-operation instead of fault finding.

ARE MINE FOREMEN JEALOUS OF CONTRACTORS?

It is my belief that the chief reason why contract mining is not more general is to be found in the petty jealousy that a mine foreman sometimes exhibits when he sees that a contractor is making more money than himself. Too often the foreman will then start to find fault with the way in which the contractor's work is done and trouble begins.

Let me say, in closing, Mr. Jones' last remark appears to repudiate all his previous arguments. He states, "A large class of miners now employed in our mines requires leadership and direct supervision that a good contractor is able to give, and the result is a larger output and cheaper coal." To this I would add, greater safety and more efficiency per man.

S. W. F.

Johnstown, Pa.

Pillar-and-Stall, Panel System for Working Low Coal

A modified pillar-and-stall system where the coal is worked out in panels after dividing the panel into four blocks, is here suggested as being a safe and economical plan for the working of low coal, particularly when the seam is underlaid with a soft bottom, which is a disadvantage in longwall work.

REFERRING to the proposition presented by L. E. R., *Coal Age*, Aug. 19, p. 403, let me suggest the working of his 35-in. seam on a combined four-block panel system, using the pillar-and-stall method to work out the coal in each block.

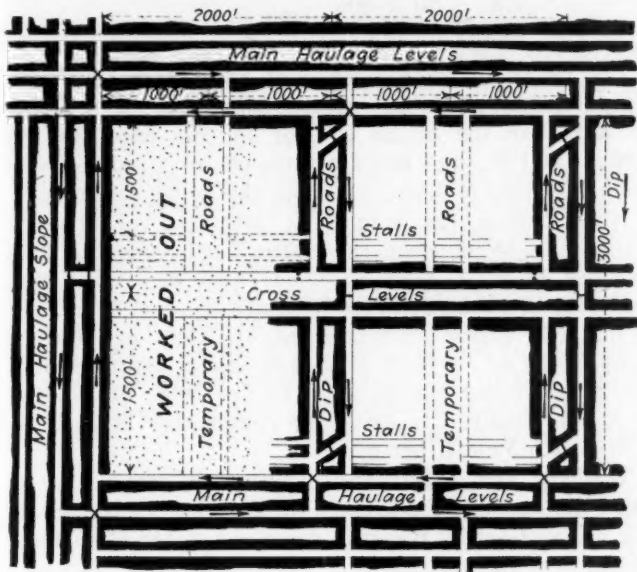
The four-block plan, as far as my knowledge goes, was first employed by C. H. Kerr, in the low mines of the North of England, where the coal was underlaid with a soft bottom. His plan, however, had the disadvantage that the coal was cut into small blocks 60 x 90 ft. and required the drawers to pull the coal 1,000 ft. to the main road.

The accompanying sketch illustrates a plan I devised that combines the best features of three systems of mining; namely, the pillar-and-stall method, the panel and four-block systems. The plan is particularly advantageous in respect to haulage and ventilation. In the

case in question, I have assumed that the coal has a slight dip and lies at a depth of, say 200 yards.

From the shaft bottom, main haulage roads are driven three abreast on the dip of the seam, while main haulage levels are turned off from these, at distances of 3,000 ft. apart, and dip roads driven between them, at distances of 2,000 ft. apart. In this manner, the coal is laid out in panels 2,000 x 3,000 ft., in area.

Each panel is then cut into four blocks by driving cross-levels and temporary dip roads, as in the figure.



FOUR-BLOCK, PANEL SYSTEM ADAPTED TO THE WORKING OF THIN SEAMS

The work of taking out the coal in each block is now started by driving stalls, say 24 ft. wide. These are turned off the dip roads and driven parallel to the main-haulage and cross-levels. The stalls are driven on 75 ft. centers, leaving large pillars between them. When these stalls meet in the center of the block, the work of drawing back the pillars is started and, to assist the haulage of the coal to the main level, temporary roads are maintained in the center of each block as indicated by the dotted line in the figure.

EXTRACTION IN FIRST WORKING SHOULD NOT EXCEED THIRTY PER CENT TO OBTAIN BEST RESULTS

The main object of any system of work is to obtain complete extraction of the coal, as nearly as possible, with due regard to economy and safety. In working this seam I would advise not taking out more than 30 per cent of the coal in the first working, in order to obtain the largest possible proportion of lump coal and secure the best results in keeping the roads open and drawing back the pillars.

Where the bottom is soft, one important feature to be observed is to keep the long side of the pillar to the rise of the seam and, in all face entries, pack the refuse on the lower side of the place, which is better for the road and keeping the place clear of gas.

Always start the work of drawing back the pillars from the bottom of the level and advance up the dip. By so doing, the weight is not thrown onto the stalls, which might cause the tracks to heave and result in a loss of coal. The pillars should be taken out in skips of ten at a time, or twenty from both sides.

It is possible to employ eighty men in the four blocks of a panel, which can be finished in seven months.

Indeed, I have seen where a hundred men could be employed. The plan affords perfect freedom from creep or squeeze. The coal being worked on the face or cleavage, it mines readily, which is a great advantage.

For safety and efficiency, the ventilation should be on the split system. The arrangement shown in the figure makes it possible for the current to be carried down from the top and up from the bottom, each block having its own circulation.

Those familiar with longwall work will recognize that a soft floor is a great disadvantage to the success of the work, not only because of the difficulty in drawing the timber as the work is advanced, but the roof may break short off along the face and cause serious trouble. In my experience, I have seen the circulation entirely cut off in low seams having a soft bottom and worked on the longwall plan. It is also very difficult to keep the roads open under such conditions.

New Castle, Col.

V. FRODSHAM.

Longwall System for Low Coal

Conditions permitting, the longwall method of mining always promises a more complete extraction of the coal than any system that can be devised.

AFTER reading the inquiry of L. E. R., *Coal Age*, Aug. 19, p. 403, asking for the best method of working a seam of coal varying in thickness from 32 to 35 in., I agree with the suggestion made in the reply by the editor. As he has stated, the description given in this inquiry is hardly sufficient to admit of a good judgment, in a particular case.

Generally speaking, however, my opinion is that a seam of coal as thin as this one cannot be worked, with any degree of success or profit, except by the longwall method of mining. In regard to "lifting bottom," instead of brushing the roof to gain the necessary headway on the roads, it must be assumed that there is some reason why that has been done in this instance.

CONVEYOR SYSTEM MAKES EASY LOADING

Judging from experience, there should be no difficulty in attaining a daily output of one thousand tons or more, in the working of this coal, provided the mine is laid out properly with due regard to economy of operation. In this respect, an important feature is arranging for the easy loading of the coal by forming conveyor faces of suitable length.

The conveyor system of moving coal at the working face, in a thin seam, is particularly advantageous where there is no fixed tonnage price in the district. By this I do not mean to advocate a lesser daily wage paid to the miners. There is no question but that the conveyor system at the working face renders the work of the miner, in loading, far less laborious.

Generally, the tonnage rate will be sufficient to offset other expenses incident to maintaining a conveyor face. If, for any reason, such a system is practicable and it is necessary to use the more costly and wasteful method of mining the coal on the room-and-pillar system, the undertaking should be carefully considered beforehand. Even in normal conditions of the coal trade, such a system will scarcely insure any profit in the working of the coal described by this correspondent. The mine would have to be more favorably located geographically than I can conceive is possible in any part of Kentucky, from where this inquiry appears to come.

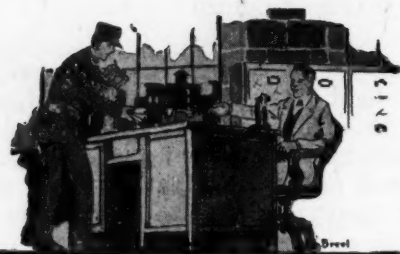
Linton, Ind.

W. H. LUXTON.



Inquiries of General Interest

Answered by
James T. Beard



Air Lift vs. Pumping

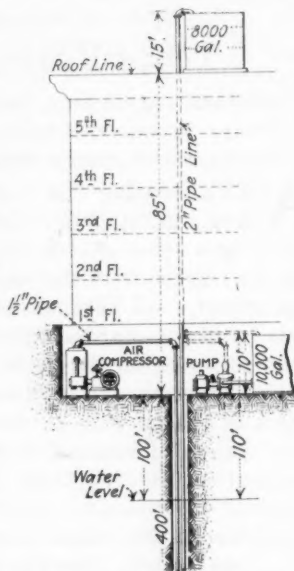
While the importance of an air lift for raising water has undoubted advantages in many instances, there are times when a combined air lift and pump will prove more efficient.

WE HAVE a large water-supply tank on the roof of a five-story-and-basement building. This tank will hold 8,000 gal. of water. Another tank having a capacity of 10,000 gal. is located in the basement of the building where there is also an air compressor. As shown in my sketch, herewith, a deep well has been bored beneath the building, to a depth of 400 ft., in which the water stands to a level of about 100 ft. below the floor of the basement. The height from the basement floor to the roof of the building is 85 ft. or to the top of the roof tank 100 ft.

At the present time, the air compressor is furnishing what air is necessary to raise the water from the well to the tank on the roof. The actual lift, or the distance from the water level in the well to the point of discharge at the top of the tank, therefore, is 200 ft. A 2-in. water pipe and a 1½-in. air pipe, each 165 ft. in length, are dropped into the well; and the 2-in. water pipe is further extended upward through the building to the top of the tank on the roof, a distance of 100 ft. This system has not worked with satisfaction, and I want to ask if there would be a saving effected by using the air lift to raise the water to the tank in the basement and then installing a small pump to force the water from this tank to that on the roof.

Newark, N. J.

BUILDING SUPERINTENDENT.



SECTIONAL ELEVATION

It is generally assumed that an air lift, wherever that system can be employed, is more efficient for raising water than a direct-acting steam pump. It has even been stated that the efficiency of an air lift may reach 80 or 90 per cent of the power required to drive the compressor, while the efficiency of the steam end of a direct-acting pump will average about 75 per cent. The estimated efficiency of an air lift, however, rarely shows more than 10 per cent, based on the ratio of the work performed to the power required to drive the compressor that furnishes the air.

The quantity of water to be delivered is not stated in this inquiry; but a flow of, say 20 gal. per min., in a 2-in. pipe, will require a velocity of 115 ft. per min.,

which is not excessive. The volume of free air required to lift 20 gal. per min., to a height of 200 ft., is

$$V = \frac{Gh}{125} = \frac{20 \times 200}{125} = 32 \text{ cu.ft. per min.}$$

The depth of submergence of the column pipe, in order to obtain the best results, should be 50 per cent greater than the actual lift, or in this case, $200 \times 1.50 = 300$ ft., and the air pressure required to overcome this head is $0.434 \times 300 = 130$ lb. per sq. in.

Now, taking the volumetric efficiency of the air cylinder as 85 per cent, the piston displacement in this cylinder is $32 \div 0.85 = 37.64$ cu.ft. per min.; and, assuming a steam-cylinder pressure of, say 65 lb. per sq.in., the piston displacement in that cylinder is $(130/65)37.64 = 75.28$ cu.ft. per min. Again, assuming a steam-end efficiency of 70 per cent, the volume of steam required to drive the compressor is $75.28 \div 0.70 = 107.5$ cu.ft. per min.

We will now consider using the air compressor to raise the water to the tank in the basement only, installing a direct-acting pump to force the water from there to the tank on the roof.

In this case, the air lift is estimated as from the water level in the well to the top of the tank in the basement, say 110 ft., which will require a submergence of only $110 \times 1.50 = 165$ ft. The volume of air required to raise 20 gal. per min. to a height of 110 ft. is $(20 \times 110) \div 125 = 17.6$ cu.ft. per min., which calls for a piston displacement in the compressor of $17.6 \div 0.85 = 20.7$ cu.ft. per min.

But, the submergence of 165 ft. in this case will require an air pressure of $0.434 \times 165 = 71.6$ lb. per sq.in.; and, taking the same steam-cylinder pressure of 65 lb. per sq.in., the required piston displacement in the steam cylinder is $(71.6/65)20.7 = 22.8$ cu.ft. per min.; and, for a steam-end efficiency of 70 per cent, the volume of steam required for the air lift is $22.8 \div 0.70 = 32.5$ cu.ft. per min.

Pumping from the tank in the basement to that on the roof requires a lift of 90 ft., which corresponds to a pressure of $90 \times 0.434 =$ say 39 lb. per sq.in. A flow of 20 gal. per min., or $(20 \times 231) \div 1,728 = 2.67$ cu.ft. per min., assuming a water-end efficiency of 85 per cent, will require a piston displacement in the pump, $2.67 \div 0.85 = 3.14$ cu.ft. per min. Therefore, again using steam at a cylinder pressure of 65 lb. per sq.in., requires a piston displacement of $(39/65)3.14 = 1.88$ cu.ft. per min.; and, assuming a steam-end efficiency of 70 per cent, we have for the volume of steam required to operate this pump, $1.88 \div 0.70 = 2.7$ cu.ft. per min.

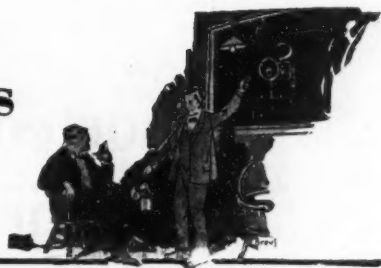
Finally, the total volume of steam required to operate the compressor furnishing air for the air lift and the pump is $32.5 + 2.7 = 35.2$ cu.ft. per min., or less than one-third of that required by the air lift alone.

Assuming the weight of fuel burned is proportional to the steam generated, approximately the saving of fuel by the combined use of air lift and pump is in the ratio of 35.2:107.5, or more than 67 per cent.



Examination Questions

Answered by
James T. Beard



Mine Foremen's Examination, Held at Pittsburg, Kans., Sept. 18, 1920

(Selected Questions)

QUESTION—Name the different gases met with in coal mines. Give the chemical symbol and specific gravity of each. How are they detected and where are they found?

ANSWER—The common mine gases are the following:

Methane or marsh gas (CH_4), specific gravity 0.559; detected by the action of the flame in a safety lamp and the flame cap formed in the lamp, the height of the cap being an index of the percentage of gas in the air. This gas is to be found in places or sections of the mine where it is generated and the air current is not strong enough or of sufficient volume to dilute the gas and sweep it away. Being lighter than air the gas accumulates at the roof and the face of rise workings.

Carbon monoxide (CO), specific gravity 0.967; detected by observing the behavior of caged mice or birds exposed to an atmosphere containing the gas. These small animals are prostrated by the gas in a far less time than a person breathing the same atmosphere. This gas is to be found in poorly ventilated places where slow combustion of carbonaceous matter is taking place in a limited supply of air, as is the case in gob fires or other smoldering matter. The gas is also the product of gas and coal-dust explosions in a limited supply of air.

Carbon-dioxide (CO_2), specific gravity 1.529; detected by the dim burning or complete extinction of the lamp; also by its effect on the system, the gas producing headache, nausea and general prostration when breathed for a sufficient time. This gas is to be found in poorly ventilated places and abandoned areas in mines, it being the product of the complete combustion of carbonaceous matter in a plentiful supply of air. It is also a product of mine fires and explosions of gas or dust. The gas being heavier than air accumulates at the floor, or in other low places or dip workings in the mine.

Hydrogen sulphide or sulphuric hydrogen (H_2S), specific gravity 1.1912; detected by its smell, which resembles that of rotten eggs. This gas is to be found in low damp places in mines where the coal contains much sulphur as pyrites, which is readily disintegrated by the action of the air and moisture.

QUESTION—What form of airway will give the most air with the same power? Why?

ANSWER—For the same length that airway whose form of cross-section most nearly approaches the circle, will give the largest air volume under the same ventilating pressure or water gage. The reason is that the circle presents the smallest length of perimeter for the same area, which gives the least rubbing surface, per square foot of sectional area, in an airway of a given length. This means a less resistance to the flow of air

and a larger air volume for the same pressure or water gage.

QUESTION—The water gage shows a reading of 2.5 in. when located on a door 5 ft. wide and 6 ft. high; what is the total pressure on the door?

ANSWER—The unit pressure corresponding to a water gage of 2.5 in. is $2.5 \times 5.2 = 13$ lb. per sq.ft. The area of the door is $5 \times 6 = 30$ sq.ft.; and the total pressure on the door is, therefore, $13 \times 30 = 390$ lb.

QUESTION—Which, if either, should be the larger, the main intake or the return airway, and why?

ANSWER—The reason for making a return airway somewhat larger than the intake is that the volume of the return current is generally increased by its higher temperature and the addition of gases generated in the mine. The return air is also subject to a lower pressure as it approaches the discharge opening, which likewise expands its volume. On the other hand, where the conditions in the mine are such that men are compelled to travel an intake haulage road it is necessary to provide a good clearance space at the side of the track for that purpose. Also, when haulage is performed on the intake, as is common in gaseous mines, the cars block the passage and obstruct the flow of air. These conditions often make it advisable to give the intake airway a larger sectional area than the return in such cases.

QUESTION—State fully how you would proceed in case an explosion occurred in a mine of which you had charge, and the ventilating fan was totally destroyed, and there were men to be rescued?

ANSWER—At a mine where an explosion is liable to occur there should always be kept on hand and in condition ready for instant use breathing apparatus of a reliable type. A trained rescue team should also be available at such mines. At very gaseous mines duplicate ventilating fans should be installed against such an emergency. There is grave danger in attempting to enter a mine after a serious explosion has taken place, and this should only be done by experienced men equipped with breathing apparatus and the necessary tools and material for restoring the circulation of air in the mine, which must be entered by the intake. No advance should be made ahead of the air, except by men wearing breathing apparatus, as such an attempt can only result fatally, and be of no avail for the rescue of the entombed men.

Immediately following the explosion steps must be taken to organize and equip a rescue team, and put them in charge of an experienced leader who is familiar with the mine and conditions therein. In such cases call for volunteers and do everything possible to restore the circulation that will permit the men to enter the mine. Assemble all needed tools and supplies and send for physicians, who must be ready to give the necessary treatment to any victims that may be rescued. Keep a cool head and avoid confusion.

Reported Retail Prices of Coal in Cities of the United States

Cost to Householders Has Increased About \$2 Per Ton During the Last Year—Department of Labor Plans to Publish Coal-Price Data Monthly Instead of Semi-Annually, as Heretofore

AN APPROXIMATE increase of \$2 a ton in the last year is shown by comparison of the average retail prices of coal on July 15, 1919, and on Jan. 15 and June 15, 1920, for the United States and for each of the cities included in the total for the United States, as shown in the *Monthly Labor Review* for August, 1920, of the Bureau of Labor Statistics of the U. S. Department of Labor. Prices for coal are secured from the cities from which monthly retail prices of food are received.

In addition to the prices for Pennsylvania anthracite, prices are shown for Colorado, Arkansas and New Mex-

ico anthracite in those cities where these coals form any considerable portion of the sales for household use.

The prices shown for bituminous coal are averages made on the several kinds. The coal dealers in each city are asked to quote prices on the kinds of bituminous coal usually sold for household use.

The prices quoted are for coal delivered to consumers but do not include charges for storing the coal in cellar or coal bin where an extra handling is necessary. Whereas prices of coal have formerly been obtained semi-annually and published in March and September, the bureau now proposes to issue them monthly.

Retail Prices Per Net Ton of Coal for Household Use

City and Kind of Coal	1919	1920		City and Kind of Coal	1919	1920	
	July 15	Jan. 15	June 15		July 15	Jan. 15	June 15
United States:				Fall River, Mass.:			
Pennsylvania anthracite—				Pennsylvania anthracite—			
Stove.....	\$12.143	\$12.588	\$14.064	Stove.....	\$12.500	\$13.000	\$14.500
Chestnut.....	12.174	12.768	14.134	Chestnut.....	12.250	12.750	14.250
Bituminous.....	8.101	8.808	10.188	Bituminous.....	9.500	10.000	12.250
Atlanta, Ga.:				Houston, Tex.:			
Bituminous.....	8.250	9.050	12.545	Bituminous.....	10.000	12.000	11.500
Baltimore, Md.:				Indianapolis, Ind.:			
Pennsylvania anthracite—				Pennsylvania anthracite—			
Stove.....	11.750	12.500	13.500	Stove.....	12.250	13.000	13.750
Chestnut.....	11.850	12.600	13.600	Chestnut.....	12.250	13.167	14.250
Bituminous.....	6.893	7.500	8.786	Bituminous.....	7.375	8.188	9.313
Birmingham, Ala.:				Jacksonville, Fla.:			
Bituminous.....	7.286	7.496	8.971	Pennsylvania anthracite—			
Boston, Mass.:				Stove.....	15.000	17.000	
Pennsylvania anthracite—				Chestnut.....	15.000	17.000	
Stove.....	12.000	12.750	14.500	Bituminous.....	10.000	11.000	14.000
Chestnut.....	12.000	12.750	14.500	Kansas City, Mo.:			
Bituminous.....	9.000	9.500	13.500	Pennsylvania anthracite—			
Bridgeport, Conn.:				Stove.....	16.210	17.400	
Pennsylvania anthracite—				Chestnut.....	16.470	17.625	
Stove.....	11.750	12.500	15.000	Arkansas anthracite—			
Chestnut.....	11.750	12.500	15.000	Furnace.....	13.593	15.950	15.150
Bituminous.....	8.000	8.500	12.000	Stove or No. 4.....	14.450	16.583	15.750
Buffalo, N. Y.:				Bituminous.....	7.469	8.625	9.118
Pennsylvania anthracite—				Little Rock, Ark.:			
Stove.....	10.700	10.890	12.000	Arkansas anthracite—			
Chestnut.....	10.800	10.990	12.000	Egg.....	12.500		
Bituminous.....	8.000		11.000	Stove.....	13.250		
Butte, Mont.:				Bituminous.....	9.250	10.375	11.950
Bituminous.....	9.836	10.381	10.444	Los Angeles, Calif.:			
Charleston, S. C.:				Bituminous.....	14.583	16.000	17.000
Pennsylvania anthracite—				Louisville, Ky.:			
Stove.....	113.400	113.400	116.200	Pennsylvania anthracite—			
Chestnut.....	113.500	113.500	116.300	Stove.....	12.750	13.750	
Bituminous.....	8.500	8.500	12.000	Chestnut.....	12.750	13.750	15.000
Chicago, Ill.:				Bituminous.....	6.816	6.836	9.813
Pennsylvania anthracite—				Manchester, N. H.:			
Stove.....	\$12.200	\$12.590	\$14.150	Pennsylvania anthracite—			
Chestnut.....	12.300	12.690	14.288	Stove.....	12.750	13.417	15.000
Bituminous.....	7.017	8.020	8.414	Chestnut.....	12.750	13.417	15.000
Cincinnati, Ohio:				Bituminous.....	10.000	10.000	12.000
Pennsylvania anthracite—				Memphis, Tenn.:			
Stove.....	12.000	12.500		Pennsylvania anthracite—			
Chestnut.....	12.000	12.667	14.000	Stove.....	16.000	16.000	17.000
Bituminous.....	6.139	6.739	8.000	Chestnut.....	16.000	16.000	17.000
Cleveland, Ohio:				Bituminous.....	7.528	8.000	8.850
Pennsylvania anthracite—				Milwaukee, Wis.:			
Stove.....	11.538	12.300	13.525	Pennsylvania anthracite—			
Chestnut.....	11.650	12.233	13.500	Stove.....	12.400	12.600	14.688
Bituminous.....	7.710	7.911	9.200	Chestnut.....	12.500	12.700	14.788
Columbus, Ohio:				Bituminous.....	8.144	8.960	11.469
Pennsylvania anthracite—				Minneapolis, Minn.:			
Stove.....	12.000	12.000	14.650	Pennsylvania anthracite—			
Bituminous.....	6.056	6.513	9.982	Stove.....	13.800	14.000	16.440
Dallas, Tex.:				Chestnut.....	13.900	14.100	16.480
Arkansas anthracite—				Bituminous.....	9.189	10.425	11.918
Egg.....	14.500	18.500	17.000	Mobile, Ala.:			
Bituminous.....	11.083	14.583	14.000	Pennsylvania anthracite—			
Denver, Colo.:				Stove.....	17.000	17.000	
Colorado anthracite—				Chestnut.....	17.000	17.000	
Stove, 3 and 5 mixed.....	13.150	14.000	14.600	Bituminous.....	9.722	10.333	11.400
Furnace, 1 and 2 mixed.....	12.650	13.500	14.530	Rochester, N. Y.:			
Bituminous.....	8.348	8.908	9.371	Pennsylvania anthracite—			
Detroit, Mich.:				Stove.....	10.600	10.800	12.100
Pennsylvania anthracite—				Chestnut.....	10.700	10.900	12.200
Stove.....	11.890	12.650	14.250				
Chestnut.....	11.980	12.750	14.200				
Bituminous.....	7.988	8.781	10.933				

¹ Per ton of 2,240 lb.

City and Kind of Coal	1919	1920	
	July 15	Jan. 15	June 15
St. Louis, Mo.:			
Pennsylvania anthracite—			
Stove.....	12.900	13.100	14.433
Chestnut.....	12.900	13.225	14.433
Bituminous.....	5.425	5.970	6.650
St. Paul, Minn.:			
Pennsylvania anthracite—			
Stove.....	13.800	14.000	16.380
Chestnut.....	13.900	14.100	16.420
Bituminous.....	9.875	11.531	13.277
Salt Lake City, Utah:			
Colorado anthracite:			
Furnace, 1 and 2 mixed.....	16.000	16.313	17.833
Stove, 3 and 5 mixed.....	16.000	16.583	18.167
Bituminous.....	7.250	8.236	9.256
San Francisco, Calif.:			
New Mexico anthracite—			
Cerrillos egg.....	20.500	23.000	23.000
Newark, N. J.:			
Pennsylvania anthracite—			
Stove.....	\$10.050	\$10.483	\$11.750
Chestnut.....	10.050	10.483	11.750
New Haven, Conn.:			
Pennsylvania anthracite—			
Stove.....	11.333	12.250	14.250
Chestnut.....	11.333	12.250	14.250
New Orleans, La.:			
Pennsylvania anthracite—			
Stove.....	16.000	17.500	18.500
Chestnut.....	16.000	17.500	18.500
Bituminous.....	8.292	9.269	10.333
New York, N. Y.:			
Pennsylvania anthracite—			
Stove.....	10.800	11.536	12.800
Chestnut.....	10.857	11.600	12.814
Norfolk, Va.:			
Pennsylvania anthracite—			
Stove.....	12.500	13.000	14.500
Chestnut.....	12.500	13.000	14.500
Bituminous.....	9.375	9.750	11.727
Omaha, Nebr.:			
Pennsylvania anthracite—			
Stove.....	16.450	17.275	19.940
Chestnut.....	16.550	17.450	20.080
Bituminous.....	8.930	10.108	11.168
Peoria, Ill.:			
Pennsylvania anthracite—			
Stove.....	11.667	13.000	13.000
Chestnut.....	11.750	13.000	13.000
Bituminous.....	5.550	6.000	6.375
Philadelphia, Pa.:			
Pennsylvania anthracite—			
Stove.....	110.850	111.881	113.286
Chestnut.....	110.950	111.906	113.250

City and Kind of Coal	1919	1920	
	July 15	Jan. 15	June 15
Pittsburgh, Pa.:			
Pennsylvania anthracite—			
Stove.....	112.750	113.750	115.250
Chestnut.....	112.663	114.000	115.125
Bituminous.....	5.833	6.179	7.333
Portland, Me.:			
Pennsylvania anthracite—			
Stove.....	12.200	13.440	15.360
Chestnut.....	12.200	13.440	15.360
Bituminous.....	8.573	9.370	12.650
Portland, Ore.:			
Bituminous.....	11.493	11.618	11.800
Providence, R. I.:			
Pennsylvania anthracite—			
Stove.....	212.000	212.950	214.500
Chestnut.....	212.000	213.000	215.500
Bituminous.....	29.000	210.000	213.167
Richmond, Va.:			
Pennsylvania anthracite—			
Stove.....	12.000	12.125	213.500
Chestnut.....	12.000	12.125	213.500
Bituminous.....	8.464	8.931	210.286
San Francisco, Calif.—Concluded.			
Colorado anthracite—			
Egg.....	19.400	21.750	21.750
Bituminous.....	13.591	15.100	15.645
Savannah, Ga.:			
Pennsylvania anthracite—			
Stove.....		15.100	16.067
Chestnut.....		15.100	16.067
Bituminous.....		11.100	13.233
Seranton, Pa.:			
Pennsylvania anthracite—			
Stove.....	7.683	8.233	9.100
Chestnut.....	7.783	8.300	9.100
Seattle, Wash.:			
Bituminous.....	39.103	39.588	39.463
Springfield, Ill.:			
Bituminous.....	3.976	3.950	4.420
Washington, D. C.:			
Pennsylvania anthracite—			
Stove.....	111.911	112.477	113.650
Chestnut.....	112.011	112.538	113.729
Bituminous.....	18.050	18.267	19.840

1 Per ton of 2,240 pounds.
 2 Fifty cents per ton additional is charged for "binning." Most customers require binning or basketing the coal into the cellar.
 3 Prices in Zone A. The cartage charge in Zone A is \$1.85, which has been included in the average. The cartage charges in Seattle range from \$1.85 to \$2.90, according to distance.

Byproduct, Steel and Electric Utility Plants In Relation to Coal Stocks*

Byproduct and Steel Companies, Unable to Store Immense Quantities Needed, Usually Have Their Own Mines—Steel-Plant Stocks Make Five-Week Gain in Six Months—Utilities Protected by Contracts, Rendering Large Reserves Unnecessary

BYPRODUCT coke plants and steel plants, including rolling mills and wire and tinplate mills, form two special classes of industrial consumers whose coal requirements and stocks can best be considered separately from the general industrial consumption.

Byproduct plants in particular require special qualities of coal, which are frequently in short supply when steam coal is plentiful. Because of the difficulty of storing the large amounts of coal they consume and because many of them have coal mines of their own, both byproduct and steel plants are likely to carry smaller reserves, measured in weeks' supply, than either the utilities or the general industrial group.

Both types of plants were the object of special concern to the Fuel Administration during the war period. Both suffered from the scarcity of coal during the winter of 1917-1918, and both by the day of the armistice had accumulated what for them was a very large reserve. Stocks at byproduct plants during the first

quarter of 1918 averaged two weeks' supply. By the armistice the reserve had been built up to more than seven weeks' supply of low-volatile coal and between four and five weeks' of high-volatile. For many weeks after the armistice the byproduct ovens lessened their receipts of coal and drew on their stockpiles. The average supply declined to four weeks four days on Jan. 1, 1919, and to three weeks two days on April 1 of the same year.

RESERVE STOCKS SHRINK ALARMINGLY

On March 1, 1920, the fifty-three plants reporting, which represented about 48 per cent of the total consumption, had on hand a supply sufficient for two weeks and one day. This was about the same as the stocks carried in the early part of 1918. During the three months from March 1 to June 1, 1920, when coal production was reduced by the switchmen's strike, byproduct stocks still further declined, reaching on the latter date the exceptionally low level of one week and one day's supply. This was a decline of 47 per cent.

*Abstract from report on consumers' stocks of bituminous coal, March 1 and June 1, 1920, by F. G. Tyron, U. S. Geological Survey, September, 1920.

By states the changes in byproduct coal stocks from March 1 to June 1 were as follows:

Decrease	No change	Increase
New England	Maryland	New York
New Jersey	Kentucky	Pennsylvania
Ohio	Tennessee	West Virginia
Indiana	Alabama	
Illinois	Colorado	
Michigan		
Wisconsin		
Minnesota		

The course of stocks at iron and steel plants during the war period closely resembled that at byproduct coke ovens, except that the shortage in the winter of 1917-18 was more acute and the surplus accumulated by the date of the armistice was more pronounced. In January and February, 1918, many plants had less than a week's supply of gas coal on hand, and the reserves of steam coal were not much larger, seldom averaging more than two weeks. Thereafter a steady growth in the reserve was made possible by the increased production of coal, so that in the autumn of 1918 stocks of gas coal reached a maximum of about six weeks' and steam coal or about seven weeks' supply. In the steel plants, as in the byproduct plants, the post-armistice period was marked by diminished receipts and steady drafts on stocks, so that the reserve declined from an average of six weeks three days on Nov. 11, 1918, to six weeks on Jan. 1, 1919, and five weeks on April 1, 1919.

STOCKS CHANGE LITTLE IN THREE MONTHS

On March 1, 1920, stocks had fallen to a level not much above that prevailing in the opening months of 1918. Plants reporting on that date, which use about 39 per cent of the total consumption of the group as a whole, had on hand an average of one week two days' supply. During the following three months the steel plants were able to increase their holdings slightly in New Jersey, Maryland, Pennsylvania, Ohio and West Virginia, but the total on hand as of Jan. 1, 1920, averaged a supply for only one week four days. In New York, Indiana, Alabama and Colorado no change was reported. In Illinois, on the other hand, stocks decreased.

The representative character of these figures is impaired by the failure of certain large companies to report. It is possible that the receipt of reports from the delinquent establishments would raise the averages for both steel and byproduct plants. The conclusion is inescapable, however, that in comparison with the reserves carried during the later part of 1918 and the first part of 1919 stocks at both classes of establishments were very low indeed.

Electric public utility plants contribute a distinct element to the demand for coal. They consume between 5 and 6 per cent of the country's output of fuel. In 1917 they required 31,693,000 net tons of soft coal. Two years later, in the year 1919, the year of business readjustment, their combined consumption of bituminous and steam sizes of anthracite was 35,000,000 tons.

ELECTRIC UTILITY RESERVES IMPORTANT

The reserves at electric utility plants are therefore an important item in the total quantity of coal in storage. On the day of the armistice these plants had on hand nearly 5,000,000 tons of coal, or about 8 per cent of the total commercial stock.

As a group electric power plants carry smaller reserves than either artificial-gas plants or general industrial consumers. The typical electrical plant con-

sumes so much coal that to carry more than a few weeks' reserve is difficult. It does not need the special grade of coal used by the gas plant; its requirements are generally protected by contract and the very fact that it is a large and steady consumer enables it to make permanent connections with the producers of coal. It is not surprising, therefore, to find that the average stocks at electric utility plants have been consistently lower than those at coal-gas and general industrial plants.

There are, of course, many individual plants which carry larger reserves; some of the little electric plants in New England, for example, had accumulated a year's supply by the close of 1918. As a class, however, the electric utilities stand midway between the byproduct and steel plants on the one hand and the gas and general industrial plants on the other, so far as the duration of their customary reserves is concerned.

VARIATIONS IN CONSUMPTION NOTED

Although the consumption of the group shows little fluctuation from season to season the rate of consumption at a particular plant may vary within wide limits. Especially is this likely to be the case where the plant is a unit in a system in which the load is transferred from one plant to another, as occasion may prescribe, or when the plant is an auxiliary to water power. In localities where hydro-electric plants are important the consumption of fuel may vary materially with the stage of the water.

The figures available on Jan. 1, 1919, and earlier dates include reports from a certain number of municipal water works; not enough, however, to destroy the comparability of the record. On these earlier dates the returns for most states were nearly complete. For the last three dates—April 1, 1919, and March 1 and June 1, 1920—the returns represent 52 per cent of the total consumption of the group.

The course of stocks at electric utility plants shows the same increase from the midsummer of 1918 to the armistice, and the same general decrease thereafter which we have seen is characteristic of other consumers. The average reserve on July 15, 1918, was sufficient for five weeks and four days' operation. From Nov. 11, 1918, to Jan. 1, 1919, stocks averaged about seven weeks' supply. During the first quarter of 1919 the average decreased from seven weeks to six weeks and six days; increases in some localities were offset by general decreases in others.

COAL STRIKE AFFECTS THE NORTHEAST

On March 1, 1920, the average had dropped to three weeks' supply, or only 44 per cent of what it had been eleven months before. The percentage of decrease during those eleven months was greater for the electric utilities than for any other general class of consumers except the steel plants and the railroads. One reason for this condition appears to be that the very large group of electric plants in the industrial Northeast was especially affected by the coal strike of November-December, 1919.

If the stocks on March 1, 1920, be compared with those on April 1, 1919, it will be found that the decrease was most marked in the territory east of the Mississippi and north of the Ohio and Potomac. In comparison with this area, which may be termed the "Northeast," the West, the Lake dock territory, and the South were generally well off.

The dock territory was at that date still carrying considerable reserves made possible by the lake shipments of the preceding season. In only one state west of the Mississippi—Texas—did stocks decrease 50 per cent during this 11-month period, and in two Western States an increase was reported. In the Southeast stocks in general compared not unfavorably with those on the earlier date. In the South Atlantic coastal plants from North Carolina to Alabama, the average increased. A decrease of six weeks and two days in Florida still left on hand a five weeks' supply. In Virginia, Tennessee and Kentucky the decrease, though greater, was nevertheless under 50 per cent.

SEVERE DEPLETION IN INDUSTRIAL SECTION

Of the Southeastern States the position of Mississippi was the worst, for the six plants reporting from that state averaged only three days' supply. In the territory north of the Ohio and Potomac, however, there were only two states in which the decrease from 1919 to 1920 did not exceed 50 per cent. The reports of the electric utilities thus confirm the testimony of other consumers that the industrial Northeast (the region north of the Ohio and the Potomac) is the region where depletion of above-ground reserves has been most serious.

During the period from March 1 to June 1, 1920, stocks at electric plants increased slightly, amounting on June 1 to three weeks one day's supply. In this respect the electric utilities resembled the steel works, which also increased their stocks. All other types of consumers reported decreases in stocks. The area over which stocks of electric utility plants increased was large. It included all the New England States, the Middle Atlantic States except New York, and the adjoining regions of Maryland, Virginia, West Virginia, Ohio and the Southern Peninsula of Michigan. Stocks also increased in many of the Southern and Western States. In fact, broadly speaking, there were but two areas which did not partake in the increase. One of these areas—the South Atlantic States of North and South Carolina and Georgia—had been carrying large stocks on March 1, and in spite of the decrease retained a comfortable supply on June 1. The second area was a real exception to the general increase. It comprised a group of states in the Upper Mississippi Valley—Kentucky, Indiana, Illinois, Wisconsin, Iowa, Nebraska and Missouri—and in this region the arrival of June 1 found the electric plants with even smaller reserves than before. A decrease also occurred in Texas.

DEDUCTIONS TO BE MADE BY COMPARISON

In the absence of definite knowledge of what constitutes a normal stock on June 1, it may be instructive to compare actual conditions on that date with those prevailing on July 15, 1918, two years before. As stocks in the summer of 1918 were admittedly large, areas now carrying still larger stocks may be assumed to have a sufficient supply. Similarly, areas which stand out by comparison with 1918 as showing very marked decreases are presumably those in which a scarcity of coal will be found, if one exists anywhere. This test, like the others points unmistakably to the general area north of the Ohio and Potomac as the one characterized by depleted reserves in early 1920.

Large as were the stocks in July, 1918, they were still larger in June, 1920, in ten states of the Union.

In three others they were at least as large, and in seven, though smaller, the percentage of decrease was less than 25. This made in all twenty states in which the depletion of reserves on June 1, 1920, did not appear serious in comparison with July, 1918. All but four of these states were south of the Ohio and Potomac or west of the Mississippi. Of the Southern States only two—Florida and Mississippi—reported a decrease of 50 per cent or over; in the former stocks were still considerable, in the latter they were very low.

In the Northeast (the territory north of the Ohio and Potomac), however, there were eight states where the decrease, as compared with 1918, exceeded 50 per cent. In that general territory the areas of especially low stocks on June 1 were New York and New Jersey, and Ohio, Indiana, Illinois and the Southern Peninsula of Michigan. Associated with the condition in Illinois and Indiana was that in Iowa and Nebraska, both of which showed comparatively low stocks. In Wisconsin also, dependent largely on Illinois, stocks were down to three weeks' supply. In Minnesota and the Dakotas the reserves compared not unfavorably with those for earlier dates, but in this connection it must be remembered that the reserves do not take into account the very low stocks on the docks at the head of the lakes.

The reports of the electric utility plants, therefore, indicate that the general region in which stocks were markedly depleted in the first half of 1920 was the region north of the Ohio and Potomac.

Navy Revises Its Smokeless List

THE navy has revised its list of mines in the smokeless fields. Prior to this revision pre-war records were used in making up requisitions for coal. The navy's requirements are now being distributed among a larger number of mines. All mines which are entitled to ship to Pool 1 are being called upon for their quota, and the intention of investigating the possibility of using Pool 2 coal has been announced.

Shortage of vessels at Hampton Roads has prevented any increase in exports of smokeless coal despite heavy demand from foreign buyers. As a result smokeless coal is moving in considerable volume to the Lakes and to Chicago. Chicago has been particularly insistent that it receive more smokeless coal since the New England order went into effect. Some 500,000 tons of smokeless coal will continue to move each month to New England on contract.

Doubts Constitutionality of Lever Act, Denies Injunction to Operators

JUDGE COCHRAN, of the Federal Court, Covington, Ky., in refusing an injunction to operators against the U. S. Attorney's office, stated that he had grave doubts of the constitutionality of section 4 of the Lever Act, stating that there is a certain unfairness where the producer cannot sell at the market price. Judge Cochran called attention to differences of opinion between various Federal judges in the matter, and said that until he was fully convinced that the law was not constitutional he would hesitate to enjoin prosecution, and that in view of the fact that the Grand Jury had fixed prices no further action would be taken at the time.

Seek Uniform Accounting, New Reconsignment Rules, and Unity in the Coal Trade

Colonel Wentz Warns National Retail Coal Merchants' Association Directors That Criticism of One Branch of the Coal Trade by Another Works to Discredit of All—To Co-operate with Traffic League

PRESIDED over by Peter Beck, chairman, the Executive Committee and Board of Directors of the National Retail Coal Merchants' Association held their annual meeting at the Commodore Hotel, New York City, Sept. 24 and 25. The sessions were well attended and matters of importance to the coal trade were considered and discussed.

A feature of the first day's meeting was the appearance of Colonel Daniel B. Wentz, president of the National Coal Association, who addressed the meeting informally regarding the bituminous situation and the outlook for the coming winter. He sketched in detail the different aspects of the bituminous situation, outlining the part taken by the National Coal Association, the American Railroad Association, and the Interstate Commerce Commission, with due regard for all others who appeared in the developments.

His most significant point was with regard to the future, and he laid emphasis upon the necessity for unity in the coal trade. This had reference particularly to co-ordinating the work of the national associations in respect to the trade at large, including publicity and defensive measures.

ADVISES UNIFICATION OF OUTLOOK AND EFFORT

Colonel Wentz's remarks provoked prolonged and valuable discussion in connection with the report of the Governmental Relations Committee. The net result was to bring out the point that the different branches of the coal trade are too prone to criticize each other for unsatisfactory conditions, losing sight of the fact that the public does not differentiate nor would Government regulation differentiate among the three branches, the trade in each case being considered as a whole.

As a result of the helpful suggestions and discussion, it is probable that definite steps will be taken looking toward a unification of the viewpoint and activities of the organized coal trade on matters that affect the entire trade, rather than the respective branches. Such a plan will work to the interest of the public and of each branch in the coal trade. It will insure to the consumers full consideration and accurate information. It will avoid misunderstandings as among the branches of the trade and will work out for the best interest of the whole country in coal matters.

The Cost Accounting Committee recommended that every affiliated association appoint a cost committee of three, from which would be formed a National Cost Council, and that the so-called Rochester system, which has received the approval of the National Cost Committee, be submitted to the Cost Council for criticism and suggestion.

"What we have particularly in mind is *uniform accounting*," the committee report said. "We don't care how Jones and Smith and Brown run their books. If they all run their books on a radical plan the systems,

no matter how good they are, are of no use for any purpose where comparison is necessary. Each retailer is not expected to take our system, but only to keep his books so he can report in the same way that other retailers may who adopt our system as a basis.

"In order to get the small man to adopt something we have to talk to him in very simple language. We try to say to him that he must keep account of his sales and of his purchases, so that he can analyze them. Our plan is for the small merchant, but the big one can follow it if he wishes, although we only ask him to adopt the general basis."

URGE ADOPTION OF UNIFORM CLAIM RULES

The Transportation Committee made its report through the traffic counsel, Stanley B. Houck. Thereupon the members adopted a resolution which in specific reference to certain of its recommendations authorized and directed Mr. Womer, chairman of the committee, to attend the next meeting of the National Industrial Traffic League, which will be held at Louisville, and to "request the League on behalf of this association and its members to: (a) Proceed before the Interstate Commerce Commission with its present case involving the reasonableness of liability clauses of sidetrack agreements. (b) That said case be extended in scope to include the reasonableness of the rental charges made by carriers for the use of the sidetrack on property, or that the League institute a new case for that purpose. (c) That the National Industrial Traffic League be requested to direct its claims committee to insist upon the adoption, without modification as applicable to coal, of the uniform claim rules which were agreed to last year between this association and the U. S. Railroad Administration."

The traffic counsel was authorized and directed to institute such test cases as may be necessary to settle disputed legal questions arising in the settlement of claims, member associations to report all cases of such disputes and differences to the traffic counsel.

Consideration and recommendation by the Accounting Committee of some form or method of keeping a record of car movement from originating point to destination, including all details and phases of the movement, was directed by another resolution.

The chairman of the Transportation Committee was authorized and directed, personally, if possible, or through the traffic counsel, to take the necessary action to secure a change in the present reconsignment rules, and to intervene in or be present at any cases brought by others affecting reconsignment, if he deems it necessary, for the protection of the retailers, similar authority being given to intervene in and be present at such other cases involving traffic matters when he deems it necessary.

All member associations were directed to report to

the chairman of the Transportation Committee all questions of unreasonable or discriminatory rates growing out of the recent rate advances for its consideration, action, or recommendation.

URGE CO-OPERATION IN SETTLEMENTS

Finally, it was resolved that the committee reaffirm its previous recommendations that all claims against carriers be handled by member associations, that no claim be settled for less than full legal liability, that associations exercise extreme care to handle claims similarly and settle them in accordance with the same principles; that carriers which confiscate coal be not allowed to replace same with other coal because of the likelihood of such coal having been confiscated from other merchants for the purpose of such replacement, and that member associations be extremely careful not

to allow any of the progress heretofore made in settlement of claims to be lost.

The Trade Relations Committee through its chairman, John E. Lloyd, reported that arrangements had been perfected with the National Coal Association whereby retailers who were the subject of poor distribution during the conditions of the past summer would be assisted in getting their fair quota of tonnage.

The foregoing summary gives little idea of the significance of some of the features of the meeting. It might be said that the outstanding feature was the spirit of aggressiveness in transportation matters, in matters affecting the independence of the coal trade as a whole, in particular with regard to legislation in certain states and possible federal legislation; in cost education for the retail trade and general education of the consumer.

Winding Gulf Operators Voluntarily Give Their Men Large Wage Advance

EFFECTIVE Sept. 1 the following inside day wage scale became effective in the Winding Gulf district: Machine runners, \$7.58; machine helpers, \$7.22; motor runners, \$7.58; motor brakemen, \$7.05; trip riders, \$7.05; drivers, one mule, \$6.90; drivers, two mules, \$7.05; bratticemen, \$7.42; bratticemen's helpers, \$6.83; tracklayers, \$7.42; tracklayers' helpers, \$6.90; timbermen, \$7.42; timbermen's helpers, \$6.83; drill runners, \$7.42; slate shooters, \$7.20; slate men, \$6.90; trappers, men, \$6.90; trappers, boys, \$4.27; inside car pushers, \$6.83; mine-door repairers, \$7.42; pipemen, \$7.42; pumpers, \$6.96; skilled wiremen, \$7.58; wiremen's helpers, \$7.01; bottom cagers, \$7.16; inside greasers, men, \$6.83; inside greasers, boys, \$4.27; inside car couplers, men, \$6.83; inside car couplers, boys, \$4.27; inside car droppers, \$6.83; miners taking daymen's places, \$7.68; all other inside day labor, \$6.83.

The new scale allows for mining an increase of 10c. per car of two and a half tons or 43½ per cent per car over the August, 1919, wage scale. For machine cutting the advance is 43½ per cent over the rate paid per car under the August, 1919, wage scale.

Under the new scale outside day wages have been increased to the following amounts: Drum runners, \$7.48; hoisting engineers, \$7.87; top-of-tipple men, \$6.80; pickable men, \$6.70; railroad-car trimmers, \$6.70; railroad-car cleaners, \$6.70; railroad-car droppers, \$6.70; blacksmiths, \$8; blacksmiths' helpers, \$7.09; car repairers, \$7.43; greasers, men, \$6.70; greasers, boys, \$4.07; couplers, men, \$6.70; couplers, boys, \$4.07; electricians, \$8; electricians' helpers, \$7.35; mine mechanics, \$8; mine mechanics' helpers, \$7.35; machinists, \$8; machinists' helpers, \$7.35; armature winders, \$7.35; teamsters, \$6.70; cart drivers, \$6.18; carpenter foremen, \$8; carpenters, \$6.70; men in floating gang \$6.18.

Pocahontas, Tug River and Thacker Coal Companies Grant Big Wage Increase

MINERS and all other employees of coal companies operating in the Pocahontas field of West Virginia will receive an increase of 25 per cent in their wages as the result of action taken toward the end of September by the Pocahontas Operators' Association, Colonel L. E. Tierney, of Powhatan, presiding over the meeting.

The wage increase in the Pocahontas field probably ranks as the biggest ever made in that field and not only includes day and monthly men but all miners, fire bosses, mine foremen, assistant mine foremen, etc. The increase, it was announced, was tantamount to a general readjustment of wages in the field. While the exact date at which the new wages would be put into effect had not been fully

determined, an effort was being made to have them become effective on Oct. 1.

When the announcement was made it was also stated that the operators of the Tug River, Thacker and other adjacent districts had agreed to make a similar increase in the wages of their employees.

The new wage scale took the miners and other employees of the Pocahontas region by surprise inasmuch as no advance had been sought or expected. The advance is more general than that recently granted in the states of Pennsylvania, Ohio, Indiana, Illinois and the organized fields of West Virginia, for the increases in those states apply only to day and monthly men, while those in the Pocahontas and other non-union regions apply to all classes of mine labor.

This is the second increase granted in the Pocahontas region within a year, a 27-per cent advance having been provided in November, 1919, though that particular revision did not apply to so many different classes of mine labor as the one just announced.

In making the new scale items were so adjusted as to provide men in executive positions with bigger wages, it having been found difficult to keep men at such work owing to the fact that they were able to make more as miners.

The increase is not expected to add to the present price of spot coal. While the actual increase in the cost has not been determined, it will be added solely to the selling price of such coal as is being mined under contract.

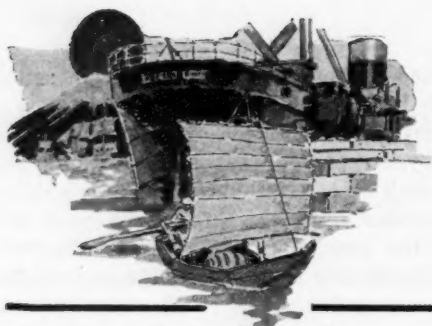
Mine Workers Begin to Recognize That The Day of the Strike Is Over

IN GENERAL the mine workers are beginning to see the fact that striking is not going to be profitable hereafter, and are settling down to work. At Martins Ferry on Sept. 30 the mine workers voted to return to work. Seven thousand workmen in Harrison, Jefferson and Belmont counties had struck for payment for all stone taken out of the mines instead of for all stone over 12 in. thick. The vote for resumption was 156 to 139.

In western Kentucky, 1,200 mine workers employed in the largest mines in Muhlenburg County met on Oct. 2, and almost unanimously voted to return to work under the new scale.

Some Iowa Miners Get Wage Increase

ACCORDING to George Heaps, Jr., secretary of the Iowa Coal Operators' Association, the miners of the first and fourth subdistricts of the thirteenth mining district have been granted an increase of 25.56c. per ton. The new scale becomes effective immediately and holds till April 1, 1922.



Foreign Markets and Export News



British Production Costs

According to an editorial in *The Colliery Guardian*, entitled "The Phantom Millions," the statistical summary of the output of coal and cost of production, proceeds and profits of the coal mining industry of this country, for the quarter ending June 30 last, issued by the Board of Trade, shows in a conclusive manner how illusory are the large profits estimated by the miners' leaders as a result of mere guesswork and hypothetical assumption. The miners, as might be expected, refuse to accept the Board of Trade statement as accurate, even though the figures are put forward as ascertained results furnished by the collieries. The miners' complaint, also, that the results shown by the figures are largely due to abnormally heavy expenditure in development and maintenance work, is particularly unfortunate, seeing that only a short time back they were complaining that the restriction in this work during the war was mainly responsible for the fall in output. At the same time the astounding statement is now made that the benefits accruing from development work are exclusively for the owners, whereas it is plainly evident that the miners themselves will receive in wages about 75 per cent of the value of any extra coal that is thus to be won. If, therefore, the object of the miners' reply to the Board of Trade statement was to impress the popular mind with the justice of their cause, they have made the great mistake of underrating the common sense of the public.

Coal Situation in Brazil

While the production of coal in Brazil is still quite small there are, according to Consul General A. T. Haeberle, Rio de Janeiro, several small mines in operation, of which the most important are the following: "Sao Jeronimo," "Butia," and "Jacuhy." The present production of these mines is approximately 25,000 tons monthly, but with the modern mining machinery which is being installed at the "Jacuhy" mine the production will be increased 15,000 tons monthly, making a total of 40,000 tons per month.

There are approximately 100,000 tons of coke produced annually, of which from 25 to 75 per cent is sold to manufacturing industries. The amount sold depends upon the price and supply of coal at all times.

The yearly consumption of coal in Brazil is approximately 1,250,000 tons, but would be much more if it were possible to obtain the full amount de-

TABLE I—COAL IMPORTS TO BRAZIL AND ORIGINATING PORTS

From—	1913 Tons	1914 Tons	1915 Tons	1916 Tons	1917 Tons	1918 Tons	1919 Tons
United States.....	274,798	260,594	635,711	614,213	642,428	480,382	744,297
Great Britain.....	1,927,387	1,266,578	525,756	209,812	172,866	152,267	171,851
Uruguay.....	55,289		2,126	462	3,026	4,837	5,636
Other countries.....					7		5,261
Total.....	2,257,474	1,527,172	1,163,593	1,024,487	818,327	637,486	927,045

TABLE II—COAL IMPORTS TO BRAZIL BY PORTS

Ports	1913	1915	1916	1917	1918	1919
Manaos.....	16,100	16,363	9,971	4,258		2,909
Fara.....	115,451	43,783	58,439	59,881	28,041	39,403
Maranhão.....	19,019	14,035	1,884	3,750	308	312
Fortaleza.....	4,183	3,209	2,179	2,264	712	606
Recife.....	114,902	93,189	77,672	68,805	33,087	73,625
Bahia.....	97,728	50,661	37,553	18,724	22,274	23,273
Rio de Janeiro.....	1,293,346	758,406	727,902	554,351	491,181	686,549
Santos.....	406,996	115,456	98,115	92,242	43,938	61,410
Rio Grande do Sul.....	66,275	60,755	5,120	7,308	7,058	18,589
Pelotas.....	2,110	2,257	4,264		601	3,308
Livramento.....	52,617	1,764	352	2,953	10,061	13,899
Other ports.....	24,619	3,883	1,036	3,790	225	3,162

sired. It is used chiefly by steamships, railways, gas and electric light plants, and other industries in the following proportions: Bunkering, 50 per cent; railways, 25 per cent; gas and electric light plants, 15 per cent, and other industries, 10 per cent. These figures are an estimate, but have been verified by two of the largest importers of coal in this country.

Table I shows the importations of foreign coal from 1913 to 1919, in metric tons. Table II shows the importation in metric tons by principal importing ports.

Practically the entire production of national coal is consumed in the states of Parana, Santa Catharina, and Rio Grande do Sul, although much foreign coal is imported there also.

Costs of Production in Great Britain

Output:	Summary for Great Britain for the Three Months Ended June 30, 1920.			Summary for Great Britain for the Three Months Ended March 31, 1920.		
	Tons.			Tons.		
Tonnage raised.....	58,144,000			62,057,000		
Mine consumption and miners' coal.....	5,883,268			6,376,122		
Tonnage disposable commercially.....	52,260,732*			55,680,878		
Costs of production:	Per Ton Disposable Commercially		Per Ton Disposable Commercially		Per Ton Disposable Commercially	
	Amount	£ s. d.	Amount	£ s. d.	Amount	£ s. d.
Wages.....	66,570,490	25 5 72	63,220,756	22 8 50†	66,570,490	25 5 72
Stores and timber.....	13,638,605	5 2 63	12,758,171	4 6 99	13,638,605	5 2 63
Other costs‡.....	6,250,094	2 4 70	4,569,566	1 7 70	6,250,094	2 4 70
Royalties.....	1,662,763	0 7 64	1,747,653	0 7 53	1,662,763	0 7 64
Total costs.....	88,121,952	33 8 69	82,296,146	29 6 72	88,121,952	33 8 69
Deduct proceeds of miners' coal§.....	371,957	0 1 7‡	413,307	0 1 7‡	371,957	0 1 7‡
Net costs.....	87,749,995	33 6 98	81,882,839	29 4 94	87,749,995	33 6 98
Proceeds: Commercial disposals¶.....	95,658,036	36 7 30§	96,260,541	34 6 91	95,658,036	36 7 30§
Balance: Debits.....						
Credits.....	7,908,041	3 0 32||	14,377,702	5 1 97	7,908,041	3 0 32||
Number of work people employed.....	1,178,614		1,168,659		1,178,614	
Tonnage raised per person employed.....	49.33		53.10		49.33	
Earnings per person employed.....	£56 9s. 8d.		£54 1s. 11d.		£56 9s. 8d.	

* Of the 52,260,732 tons disposed of commercially, 9,432,588 tons were shipped for export and foreign bunkers, mainly from South Wales and Monmouthshire, Northumberland, and Durham.

† Management, salaries, insurance, repairs, office, selling, and general expenses, etc.

‡ The proceeds of miners' coal, so far as it is supplied at special price, are treated as a reduction of the cost of producing the coal disposed of commercially, and the deductions in the "per ton" columns have been calculated by dividing the proceeds of miners' coal by the tonnage disposable commercially.

§ On May 12, 1920, the price of coal sold for home consumption was raised as follows:—(a) Coal for domestic use by 14s. 2d. per ton; (b) Coal for industrial use by 4s. 2d. per ton.

|| Out of the balance shown in Balance item (Debits, Credits) provision has to be made for—depreciation, interest on debentures and other loans; capital adjustments under the Finance Acts; and the profit to which the coal owners are entitled under the Coal Mines (Emergency) Act, 1920.

¶ An advance in wages operated from March 12, 1920.
(From *Colliery Guardian*.)

Middle West Retailers Given Emergency Coal

Open-Top Priority Extended to Rocky Mountains—Committee to Pass on Assigned Cars for Public Utilities—Twelve Million Tons a Week Required to Meet New Program

AN ABSOLUTE priority on open-top cars for use in the transportation of coal is allowed by the Interstate Commerce Commission in its Service Order No. 20, issued Oct. 8. When routed back to the mines these cars may be loaded with other freight, but must not be carried materially out of the direct line of return.

Assigned cars for public utilities are to be allowed in the future only upon special permit issued by the Interstate Commerce Commission. This ruling is contained in Service Order No. 21, which supersedes Service Order No. 16. In connection with the administration of Order No. 21 a committee of three is to be appointed to make recommendations to the commission on each individual application for relief. This commission is to consist of a representative of the railroads, a representative of the operators, and a representative of the public utilities.

Another important phase of the new orders is that they are to be effective west of the Mississippi as far as the Rocky Mountains.

The situation which culminated in the issuance of the new service orders was precipitated by the railroads when they called to Washington representatives of the operators, public utilities, and shippers to explain that it would be impossible to take care of the needs of the Middle West if the Lake program was to be carried out. At the first session of the interests mentioned it was apparent that no agreement could be reached to which all would subscribe. This resulted in the entire matter being laid before division 5 of the Interstate Commerce Commission. It has been erroneously stated in the press that the matter was first agitated by the National Coal Association.

PUBLIC UTILITY MEN PRESENT DEMANDS

A determined fight was made by George W. Elliot, the head of the National Committee on Gas and Electric Service. He was supported by a large number of representative utility men from various parts of the United States. It was their contention that the public utilities are entitled to assigned cars as much as are the railroads.

The first proposal was to make the committee of three the agent of the Interstate Commerce Commission with authority to pass upon those cases where a public utility was to be allowed to have priority in securing its coal supply. Mr. Elliot strenuously objected to that proposal on the ground that the utility representative always would be in the minority on the committee. As a result it was arranged that the committee simply would make its recommendation and the Interstate Commerce Commission would exercise its own power.

It is believed that it will be possible under the present arrangement to allow the production of coal at the rate of more than 12,000,000 tons a week.

The week's session was accompanied by rumors that the President was disgusted with the manner in which the coal situation was being handled. These rumors were finally put at rest by a statement at the White House that the President is not considering the appointment of a fuel administrator. Some of the operators feared that Democratic pressure would be exerted on the President to appoint a fuel administrator. If such action were taken in the interest of the domestic consumer of coal, it was recognized a political advantage of no mean proportions would be secured. In case the new orders are not carefully policed and should fail to bring out the amount of coal necessary to meet both the Lake and Middle West program, there are some lingering doubts as to whether or not a fuel administrator would be named.

Under the new arrangement, 2,100 cars are to be allotted

daily for the Middle West. Of this number Ohio is to get 800 cars daily, Michigan 500 and Indiana 200.

The text of Order No. 20 is as follows:

It appearing, in the opinion of the commission, that because of a shortage of equipment which continues to exist upon the lines of each and all the common carriers by railroad subject to the Interstate Commerce Act within the territory east of the eastern boundary of the States of Montana, Wyoming, Colorado and New Mexico, and because of the inability of said common carriers properly and completely to serve the public in the transportation of coal, an emergency exists which requires immediate action:

It is ordered that such common carriers by railroad in the aforesaid territory which serve coal mines, whether located upon the line of any such railroad or customarily dependent upon it for car supply, herein termed coal-loading carriers, be, and they are hereby, authorized and directed, until the further order of the commission, to furnish such coal mines with open-top cars suitable for the loading and transportation of coal (herein termed coal cars) in preference to any other use, supply, movement, distribution, exchange, interchange or return of such coal cars; provided that such coal cars may be used in service moving in the direction of the mine or mines to be supplied, on the return movement, after the discharge of the coal lading thereof, upon a route not materially out of line and to points not beyond such mine or mines; and provided further that the phrase "coal cars" as used in this order shall not include or embrace at-bottom gondola cars with sides less than 38 inches in height, inside measurement, or cars equipped with racks, or cars which on June 15, 1920, had been definitely retired from service for the transportation of coal and stenciled or tagged for other service.

It is further ordered that all common carriers by railroad within said territory other than coal-loading carriers, (herein termed non-coal-loading carriers) be, and they are hereby, authorized and directed until the further order of the commission to deliver daily to a connecting coal-loading carrier or carriers, empty or loaded coal cars up to the maximum ability of each such non-coal-loading carrier to make such deliveries, and of each such connecting coal-loading carrier to receive and use the coal cars so delivered for the preferential purposes herein set forth.

It is further ordered that all such common carriers by railroad in said territory be, and they are hereby, authorized and directed forthwith, until the further order of the commission to discontinue the use of coal cars for the transportation of commodities otherwise than as hereinbefore specified (a) as to each coal-loading carrier, so long as any coal mine remains to be served by it with coal cars, and (b) as to each non-coal-loading carrier, so long as deliveries of any coal cars to connecting carriers may be due or remain to be performed under the terms of this order.

It is further ordered that all common carriers by railroad within the territory hereinbefore described be, and they are hereby, authorized and directed until the further order of the commission, to place an embargo against the receipt of coal or other freight transported in open-top cars suitable for coal loading, as hereinbefore defined, by any consignee, and against the placement of such open-top cars for consignment to any consignee who shall fail or refuse to unload such coal or other freight so transported in coal cars and so placed has been unloaded by such consignee; provided that this authorization and direction shall not interfere with the movement of coal to any coal pool or pools when authorized by any order heretofore or hereafter entered by the commission or coal consigned to tidewater or the Lakes for transshipment by water, nor shall it apply where the failure of the consignee to unload is due directly to errors or disabilities of the railroad in delivering cars.

It is further ordered that all rules, regulations and practices of said carriers with respect to car service are hereby suspended in so far only as they conflict with the directions hereby made; and that this order shall supersede and stand in lieu of Service Orders Nos. 7, 9, 12 and 15 of the commission, as heretofore made, entered and amended or supplemented, and that otherwise the authorizations herein contained are to be considered as not conflicting with or superseding any other service order heretofore entered by the commission; and that this order shall be effective Oct. 15, 1920.

And it is further ordered that copies of this order be served upon the carriers hereinbefore described, and that notice of this order be given to the general public by depositing a copy hereof in the office of the secretary of the commission at Washington, D. C.

Order No. 21 reads as follows in its entirety:

It appearing, in the opinion of the commission, that because of a shortage of equipment which continues to exist upon the lines of each and all of the common carriers by railroad subject to the Interstate Commerce Act within the territory east of the eastern boundary of the States of Montana, Wyoming, Colorado and New Mexico and because of the inability of said common carriers properly and completely to serve the public in the transportation of coal, an emergency exists which requires immediate action:

It is ordered that effective Oct. 15, 1920, and until further order of the commission, all common carriers by railroad within said territory to the extent that may be necessary in order that public utilities which directly serve the general public under a franchise therefor with street and interurban railways, electric power and light, gas, water and sewer works; also ice plants which directly supply the public generally with ice; also hospitals, schools and other public institutions of the United States, state or municipal

governments, may be kept supplied with coal for current use but not for storage, exchange, or sale, be, and they are hereby, to the extent that the commission or its agent or appointee thereunto duly authorized shall hereafter from time to time designate in individual cases, but not otherwise, authorized and directed to place, furnish and assign cars to coal mines for the transportation of such coal in addition to and without regard to the existing ratings and distributive shares for mines upon said railroad; provided that such coal shall not be subject to reconsignment and that a written report of the cars placed hereunder shall be made to the Interstate Commerce Commission by the railroad placing the cars, as often as once each week.

It is further ordered that Service Order No. 16, made and entered by the commission Sept. 16, 1920, be, and the same is hereby, suspended and superseded, effective Oct. 15, 1920.

And it is further ordered that copies of this order be served upon the carriers hereinbefore described, and that notice of this order be given to the general public by depositing a copy hereof in the office of the secretary of the commission at Washington, D. C.

In issuing the new service orders the Interstate Commerce Commission made public the following explanation:

The increased production this year over last has been consumed in a large part by industries, by railroads and other public utilities, by the Northwest and by New England, and by exportation. There has not been a sufficient production of the sizes of coal for domestic purposes to satisfy the present demands for such uses. Vigorous complaints have been received in behalf of the domestic users of coal in Indiana, Ohio and Michigan. Complaints have also been received from Oklahoma, Texas and other Western states. It is imperative that the production of coal be even further increased. To accomplish this it will be necessary to increase the car supply for coal.

As a means to such end, the commission has entered an order requiring all railroads east of the eastern boundary of the States of Montana, Wyoming, Colorado and New Mexico to furnish coal cars to coal mines in preference to any other use. The orders of this character heretofore issued have applied only east of the Mississippi River. The present order runs until the further order of the commission, and will be relaxed as soon as it appears practicable to do so. As a further means of accomplishing the object sought all outstanding permits for the use of coal cars for transporting other freight are canceled effective midnight Oct. 10. Thereafter, until the domestic coal situation is well in hand, permits of this character will be issued only upon a showing of public interest. Arrangements will be made for the continuance of the movement of certain essentials, such as sugar beets, to factories.

Plans have been worked out in conjunction with representatives of the coal operators and of the railroads by which it is expected the needs of the domestic consumers of coal will be substantially met. The program contemplates that approximately 2,100 cars will be transported daily for domestic use in Indiana, Ohio, Michigan, eastern Kentucky, eastern Tennessee, western Pennsylvania and West Virginia. Attention is also being given to the needs of domestic consumers in other states.

Although the railroads serving anthracite mines have furnished such mines close to 100 per cent car supply, and although the anthracite production up to Sept. 25 exceeds that of the same period last year, the production this year has been retarded by the recent coal miners' strike in the Pennsylvania anthracite mines and by the switchmen's strike which commenced in April. There is a shortage of anthracite coal in some of the New England states due largely to embargoes placed by certain New England railroads in effect during a substantial part of the time between April and Aug. 24. These embargoes have now been modified, and it is expected that the rail movement of anthracite coal to New England will proceed unhampered.

Request for Reconsideration of Wage Award Referred to Secretary Wilson

PRESIDENT WILSON has referred to Secretary of Labor Wilson for report the request of the policy committee of the anthracite coal miners for reopening of the recent wage award to permit of adjustment of alleged inequalities. The President sent the request to the Department of Labor and in the absence of Secretary Wilson the department forwarded it to the Secretary, who is at present in Ohio. The policy committee met Secretary of Labor Wilson at Canton, Ohio, on Oct. 5, when they presented their demands for reopening of the award, but no report has been received as to the nature of their request or the manner in which it was looked upon by Secretary Wilson.

Pennsylvania Coal Co. Strike Ends; Contracting Abolished

BY AGREEING that no contractors shall be allowed to operate in the collieries of the Pittston district and that such contractors as are laid idle by this provision shall not be permitted to work at all in the companies' mines unless the grievance committee consents to their presence, the Pennsylvania Coal Co. and the Hillside Coal & Iron Co. on Oct. 7 ended the eleven weeks' strike. The terms were arranged by James A. Joyce, of the Greater Pittston Chamber of Commerce.

Logan County, West Virginia, Has Fatal Shooting; One Killed, Five Wounded

EARLY in the night of Oct. 6 a deputy sheriff, Joseph Gore, present at a meeting of Blair Local Union 2887 of the United Mine Workers, was fatally shot by a miner at Blair, Logan County, West Virginia. Three other deputies were seriously wounded, and two miners were shot in the fight that ensued. Fred Mooney, secretary of District No. 17, says the deputy got into an argument with the miner during the progress of the meeting and the fight was the outcome of the disagreement.

Lehigh Valley Engages Eminent Counsel in Defending Anthracite Control Case

A DISTINGUISHED array of legal talent appeared before the U. S. Supreme Court on Oct. 5 in behalf of the Lehigh Valley Railroad Co. to defend the company in the suit brought by the Government to restrain it from alleged control in anthracite coal. The case came up on re-argument on appeal by the Government from the decision of the lower court in New York, which five years ago decided in favor of the railroad company. Former argument in the case did not convince the court on various points.

Mine Workers Become Impresarios

THAT the life of the coal miner is not entirely spent underground, and that some of the Western miners have a pretty good time after their day's work was revealed by Perry W. Karg, one of the American Federation of Labor organizers, in a report from Rock Springs, Wyo., which says the "coal miners are running their own opera house with picture shows and vaudeville.

Citizens Launch Campaign to Cut Coal Price

HIGH prices for coal in Washington are to be investigated by a committee of fifteen to be appointed by the Federation of Citizens of the District of Columbia. The aim is to bring down the cost. At its meeting on Oct. 2 nearly all of the delegates questioned the fairness of the present prices of coal.

Colorado Fuel & Iron Co. Takes Care of Its Day Workers

RETROACTIVE to Sept. 1, the Colorado Fuel & Iron Co. has established a wage scale whereby the day workers will receive an increase of \$1.50 a day, with the exception of boys and trappers, who will receive an advance of 82c. E. H. Weitzel, manager of the fuel department, in announcing the increase, is said to have declared that it would not involve any advance in the price the public was paying.

Producer Allowed Profit of \$1.25 a Ton

AT THIS writing no indictments have been returned by the Grand Jury at Huntington, W. Va., against a number of coal mining and sales agencies. A special report was made public, however, in which the Grand Jury finds that a profit of \$1.25 per ton over the actual cost of production is all that the producer is entitled to charge, while a commission of 8 per cent constitutes a reasonable profit for the broker.

THAT THE PRESIDENT has put his foot down decidedly on any price fixing became known when the Attorney General last week admitted that he would like to establish a fair price on coal as had been done on sugar and other commodities, but that such a plan did not have executive approval.

Judge Pritchard Dissolves Argyle Injunction

Failing to Prove Violation of Law, Government Counsel Moved That Suit Be Dismissed—No Indictments Returned—Resolutions of Northern West Virginia Operators Eliminate Alleged Selling Abuses

SITTING as judge of the District Court at Huntington, W. Va., on Monday, Oct. 4, Judge J. C. Pritchard of the U. S. Circuit Court of Appeals presided at the hearing to make permanent the temporary injunction obtained by the Argyle Coal Company restraining U. S. Attorney L. H. Kelly of the southern district of West Virginia from indicting or attempting to indict the company on a charge of profiteering under the Lever Act. Upon the conclusion of the arguments the Court dissolved the injunction and dismissed the suit. Judge Pritchard granted the temporary injunction at Asheville, N. C., when he set Oct. 4 as the date of the hearing of the argument on the question of making the injunction permanent.

It became apparent that Judge Pritchard would dissolve the restraining order when counsel for the Government made a motion to that effect and also filed a motion to dismiss the bill, accompanying his motion with the statement that the Government intended no prosecution against the Argyle Company, as no violation of the law on the part of the company had been disclosed by the Government. The order was dissolved and the bill dismissed because, for the reasons just assigned, the prayer of the bill to enjoin prosecution became merely a moot question and not a test case.

While the temporary restraining order of the Argyle Company was dissolved, at the same time it was announced by counsel for the Government that ample opportunity would be afforded companies desiring to do so to file bills similar to that of the Argyle Company before any indictments were returned. No indictments were returned at the Monday session of the District Court.

POSTPONEMENT OF PRICE INVESTIGATION LIKELY

That fact and the announcement of the U. S. Attorney that an opportunity would be given to secure restraining orders as well lends color, it is believed in some quarters, to rumors of an agreement or of a prospective agreement between coal operators in southern West Virginia and the Department of Justice under which there would be an indefinite postponement of the coal price investigation in the southern part of the state.

In view of the action taken in the case of the northern West Virginia operators it would seem that the Department of Justice could not with any degree of consistency refuse to give the operators of southern West Virginia an opportunity to create a fair practice committee or some other method of avoiding the pyramiding of prices. There also is a possibility that Judge Rose's charge to the grand jury may have had something to do with giving a new turn to the investigation before the southern district court.

U. S. Attorney Kelly has refused to confirm or deny the report of a prospective agreement, merely contenting himself with saying that if any such agreement were reached it would have to be reached at Washington and not at Huntington.

Resolutions adopted at Fairmont by the Northern West Virginia Operators' Association and presented to the Attorney General at Washington, which led to the suspension of subpoenas for appearance in the U. S. District Court for the northern district of West Virginia, were as follows:

Whereas at a meeting of coal operators of northern West Virginia and their attorneys, U. S. Attorney Stuart W. Walker and Assistant to the U. S. Attorney General Henry S. Mitchell, in the latter's office in Washington, on Saturday, Sept. 18, 1920, which meeting was arranged for the purpose of considering the Federal Grand Jury investigation into the coal industry then scheduled to begin Sept. 21, 1920, and the reasons for instituting same, the said U. S. Attorney and Assistant to the Attorney General severely criticized some of the trade practices alleged to be prevalent in the coal industry and

Whereas the said U. S. Attorney and Assistant to the Attorney General suggested that a meeting of all operators and wholesalers of coal in northern West Virginia be called and ways and means be devised to eliminate said practices, pending which meeting the said Federal Grand Jury investigation would be

postponed; and wholesalers of northern West Virginia have been and are desirous of conducting their business in a manner satisfactory to the Department of Justice and in full accordance with the letter and spirit of the laws of the United States;

Therefore be it resolved by the operators here assembled, as follows:

(1) The term "producer," "purchaser," "dealer," or "wholesale dealer," whenever herein used shall include any person, partnership or corporation engaged respectively in producing, purchasing or dealing in coal.

(2) The producer will require every purchaser of coal to stipulate and agree in writing that the coal so purchased shall not be resold through more than one other wholesale dealer. This stipulation shall be endorsed on the order for the coal and upon the bill for the same.

(3) No attempt will be made by any producer to limit or fix the price at which any other producer shall sell his or its product, but each producer will in every way attempt to eliminate and prevent the creation of high or excessive prices by artificial bidding.

(4) All producers will give their moral support to the end of carrying out and fulfilling so far as practicable all contracts existing for the shipment and sale of coal, having due regard for physical conditions, car supply and Government regulations and railroad embargoes.

(5) All producers realize the moral obligation to furnish coal for local consumption in such sections of this state which naturally and regularly are supplied by the coal producers of northern West Virginia in such quantity as may be necessary for the current requirements of those consumers as directly as may be possible.

(6) The producers will co-operate with the common carriers in so far as practicable by individually complying with all embargoes and by discharging and preventing so far as feasible all overshipments on the genuine permits, and of shipments on false or forged permits.

(7) No purchaser will sell coal for export except upon an order containing a stipulation to the effect that the coal is intended for export, and that it will not be resold to the domestic trade, and not resold to more than one other purchaser before it shall reach the actual exporter. This stipulation shall be inserted in all card manifests and the purchaser's invoice, as well as in the original order for the coal.

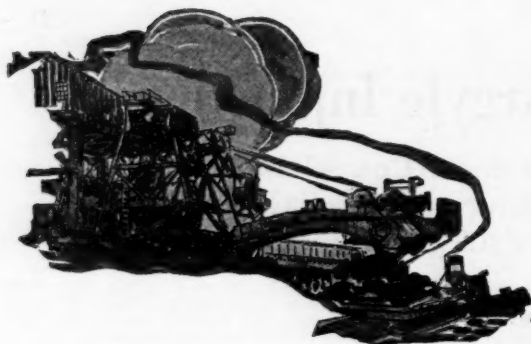
(8) No wholesale dealer who shall purchase coal from another wholesale dealer or dealers will resell the same to any other than a retail dealer or consumer. An exporter of coal shall for the purposes of this agreement be deemed and treated as a consumer. The contract of purchase and sale contemplated in this paragraph shall contain upon its face a stipulation binding the parties to carry out the provisions of this paragraph.

(9) The producers and wholesale dealers who shall be or become parties to this agreement will create a standing committee to be called the "Fair Practice Committee of Northern West Virginia," to consist of seven members and to be constituted and appointed in the following manner: Each of the following districts shall meet and select one member of the committee; preferably from that district, Wheeling, Morgantown and Kingwood, Fairmont, Grafton, Clarksburg and Elkins and Upper Potomac. The six members so selected shall select a seventh member at large. The Fair Practice Committee so constituted shall organize with the assistance of George T. Bell, executive vice-president of the Northern West Virginia Coal Operators' Association, as secretary. This committee shall meet regularly once a week and at such other times as may be necessary, and shall exercise a general supervision over the manner in which the parties to this agreement shall comply with the terms thereof, and carry out its provisions. This committee in the discharge of its duties will consult with the Department of Justice and its duly authorized agencies.

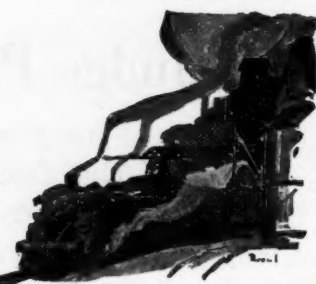
(10) A list as complete as feasible of all producers and wholesale dealers engaged in the production or marketing of coal in the northern district of the State of West Virginia who shall have become parties to this agreement and undertake to abide by and carry out its provisions shall be furnished to the Attorney General of the United States and the District Attorney for the consideration of the Department of Justice, on the 24th day of September, A. D. 1920, and for the joint consideration of the Department of Justice and parties entering into and becoming bound by this agreement. Supplementary lists of such producers and wholesale dealers as shall hereafter enter into and become bound by this agreement shall from time to time be furnished to the Department of Justice either by delivering the same to the Attorney General of the United States or to the U. S. Attorney for the northern district of West Virginia.

(11) Any producer or wholesale dealer engaged in the production or marketing of coal in the northern district of the State of West Virginia who shall not have been represented at the meeting at which the foregoing resolutions shall have been passed and adopted, and shall not thereby have become a party to the agreement contained in said resolutions may become a party thereto by a statement in writing signed by him, them or it, signifying an acceptance of the provisions herein contained and agreeing to abide by and keep and perform the undertaking herein outlined, and by delivering such statement to George T. Bell, executive vice-president of the Northern West Virginia Coal Operators' Association, or his successor, at Fairmont, W. Va., either in person or by mail.

(12) It is recommended that the Advisory Committee be enlarged to provide for representation from districts not covered by former appointments, and so constituted to further co-operate with the Department of Justice with power from this meeting to conclude an agreement substantially as above suggested and to take what further action may be deemed necessary to promote the welfare of the operators of northern West Virginia in this matter.



Production and the Market



Weekly Review

PRODUCTION of bituminous coal fell off sharply during the week ended Oct. 2. The decrease centered in the fields north of the Ohio and Potomac. Anthracite production was back on a normal basis. Beehive coke output decreased 22,000 tons for the week. Bituminous prices advanced slightly. An active call for domestic and renewed buying for reserves has offset a softer industrial situation. Labor has a distinctly better tone. Car movement is still unsatisfactory, but steps for improvement have been taken and better production may be expected.

BITUMINOUS

Bituminous coal production declined sharply during the week ended Oct. 2. The total output is estimated by the Geological Survey at 11,348,000 net tons, a decrease when compared with the previous week, of 506,000 tons, or 4.3 per cent.

Labor is showing a distinctly better tone. Troubles in the eastern Ohio and western Kentucky field have terminated and the men are again reported at work. An influx of newcomers to the Alabama mines, as well as the return of many old workers has made for increased production in that strike zone. The Clinton field of Indiana is still tied up over the question of price of coal for mine workers. Rumbles of trouble are heard from Colorado, where the issue of recognition of the union is still being pressed.

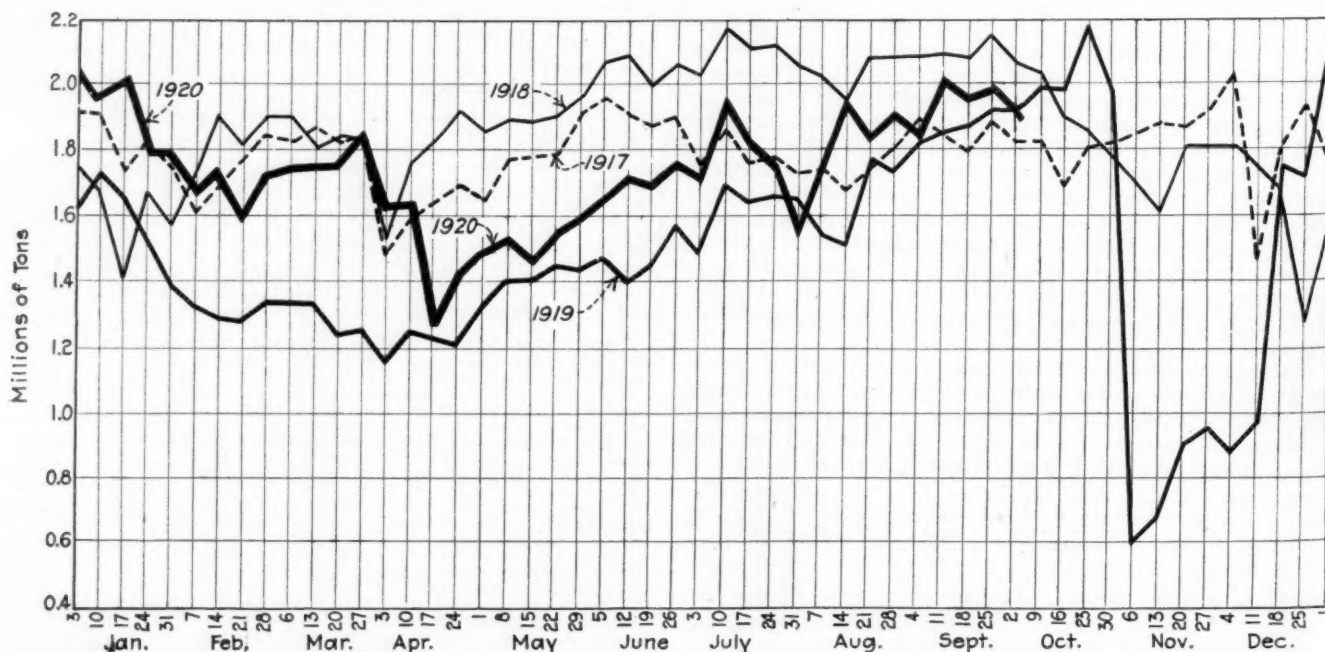
Car supply shows little improvement at this writing. However, orders promulgated recently by the Interstate Commerce Commission will tend toward better placements and promised co-operation by railroads also indicates an in-

creasing rate of production. Placement in the northern Appalachian region was generally improved although a sharp decline in the Fairmont and Kanawha fields was reported. The middle Appalachian region reports 100 per cent supply in the Pocahontas and Tug River field, improvement for Logan and Thacker, while the New River field reports a decline in cars placed. Southern Appalachian placements were better.

EXPORT PRICES LEAD THE MARKET

Pittsburgh district coal for export is quoted \$10@ \$11.25; gas, \$11, and steam coal, \$8@ \$9. Coal for Lakes is around \$7.25. Eastern Ohio quotations are firm at \$6.50@ \$7.50. Kentucky coals are lower following the price fixing activities of the Government in that section, eastern Kentucky having practically accepted \$6 as the figure for its product. Buffalo reports \$11.50 for special grades, with buyers showing a tendency to keep out of the high-priced market. The Baltimore market for good grades is \$10.50 @ \$11.50, while New York prices are up—\$10.50 for Pool 9, \$10.25 for Pool 10 and \$9.25 for Pool 11. Western lignite is quoted at \$5@ \$5.80. Chicago and Boston markets report a decided slump in demand with consequent lower prices. Alabama's strike and fuel shortage have lead to the establishment of a state fuel administrator to regulate prices and distribution during emergencies. There was no evidence in the mine reports of a cessation in the very active demand for coal, according to the Geological Survey. Not an operator in the entire country reported loss of working time for lack of orders.

Average Daily Production of Bituminous Coal*



*From weekly report of Geological Survey.

Continued reports from the West and Middle West of slack freight movement and the laying off of railroad labor because of the decrease in business have so far not been reflected in the coal market. A general feeling of hesitancy is affecting business and before long this will be felt in lessened demand for coal, both because of shortened requirements by the railroads and by reason of a pronounced policy on the part of buyers for industrial plants of purchasing only from hand to mouth while the period of price recessions in other commodities is on.

In some sections, as New England, the industries are well stocked; in others, as the Northwest, they are still calling for coal. Retail dealers in the territory where bituminous coal is the domestic fuel represent the backbone of the market, while on the Atlantic seaboard the export market is setting the pace. The Lake buyers are urgently seeking coal, but are not setting the pace in price, depending on priorities instead. The action of the Interstate Commission last week in replacing the blanket order for assigned cars for public utilities by announcement that such preference will be given in the future only on investigation of each case by a special committee, whose report will be passed on by the commission itself, is somewhat of a damper on the free and easy way in which utilities have been obtaining coal all summer. The action is generally regarded as having resulted from disclosures of abuses of the previous order by utilities and shippers in New York.

LAKE MOVEMENT TO BE STIMULATED

That the Government and railroads are still concerned over their failure to meet the scheduled Lake program is evidenced by the reports from Washington of the meeting there a week ago, which resulted in the issuance of Service Orders Nos. 20 and 21, providing, as outlined above, in less assigned cars for utilities and for extension of the priority on open-top coal cars to the Rocky Mountains, to cancellations of permits for the use of open tops for use other than coal and renewed pledges of 12,000,000 tons a week of bituminous coal.

A large share of the trouble in meeting consumers' requirements in the East is ascribed to the drain on production for railroad fuel, public utilities and the Lakes forced on operators by orders of the Interstate Commerce Commission. The following table furnished *Coal Age*, obtained from an authoritative source, shows that on three railroads serving Western Pennsylvania and Northern West Virginia, whereas the car supply was from 50 to 75 per cent rating, the coal left over for meeting contract obligations and the attractive spot market is on the average less than 10 per cent under the rating at the mine, because priorities and private cars took the coal.

	Penna. Railroad	Monongahela Railroad	B&O R.R.	Average
Total percentage empty cars furnished.....	51.1	75.3	60.0	62.1
Distribution of total empty cars placed:				
Private Cars.....	13.2	20.0	10.0	14.4
Railroad Fuel.....	30.0	30.0	30.0	30.0
Public Utilities.....	10.4	10.0	20.0	13.4
Lake Coal.....	22.3	28.4	30.0	27.0
Percentage of total cars loaded for commercial shipments.....	24.1	11.6	10.0	15.2
	100	100	100	100
Percentage of cars available for commercial shipments based on 100% total railroad rating of the mines.....	12.3	8.7	7.2	9.4

Governor Cox is reported to have revived the 1917 Ohio State Coal Clearing House Committee for the purpose of making equitable distribution of the emergency coal, for which provision has recently been made. In Indiana the Special Coal and Food Commission, created at the last special session of the Legislature, has fixed prices at the mines for coal produced in Indiana, ranging from \$2.80 to \$5.85 per ton according to quality and preparation. The highest prices are for Brazil block. These prices are subject to readjustment at any time. Jobbers' commission of 15c. has been allowed.

Considerable apprehension is being displayed in the Northwest over the continued failure of Lake dumpings to attain the required figure of 4,000 tons daily. Dumpings for the week ended Oct. 2 totaled 882,579 tons. With the

season of navigation nearing the close it is felt that considerable pressure must be exerted to provide against a shortage in the Northwest this winter.

Expressed in net tons the dumpings over tidewater piers as reported to the Geological Survey by the Tidewater Bituminous Coal Statistical Bureau were 1,280,000, almost exactly the same as during the preceding week. Dumpings for New England account declined sharply, amounting to 203,000 net tons, or at the rate of 870,000 tons per month. Exports rose from 582,000 to 653,000 tons for the week, or at a monthly rate of 2,800,000 net tons.

TIDEWATER BITUMINOUS COAL SHIPMENTS FOR THE WEEK ENDED OCTOBER 3, 1920a

	(In Net Tons)					Total Dumped
Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	
Coastwise to New England.....	71,000	12,000	16,000	104,000	.....	203,000
Exports.....	.....	145,000	146,000	354,000	8,000	653,000
Bunker.....	91,000	10,000	19,000	68,000	1,000	189,000
Inside capes.....	.....	39,000	28,000	4,000	.....	71,000
Other tonnage.....	150,000	.....	.....	14,000	.....	164,000
Total.....	312,000	206,000	209,000	544,000	9,000	1,280,000

Movement to tide increased again during the week ended Oct. 2. The total number of cars dumped at the five Atlantic coal ports, according to daily telegraphic reports to the American Railroad Association, was 26,361, the largest in any week since Aug. 14. Dumpings decreased slightly at Philadelphia, but increased at the other ports, particularly at New York.

CARS OF BITUMINOUS COAL DUMPED WEEKLY OVER TIDEWATER PIERS AT THE FOUR NORTH ATLANTIC PORTS AND CHARLESTONa

Week Ended	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Total
Sept. 4.....	10,109	3,745	3,191	7,672	358	25,275
Sept. 11.....	8,304	3,421	3,009	7,271	323	22,328
Sept. 18.....	7,966	3,563	4,131	8,501	275	24,436
Sept. 25.....	7,316	3,527	4,238	8,743	448	24,271
Tot. 2.....	9,121	3,673	4,197	8,872	498	26,362

The total tonnage handled at tide in September was approximately 6,300,000 tons as against 5,352,000 tons in August. September exports were about 2,270,000 tons, a slight decrease. The total shipped to New England approximated 1,110,000 tons, as against 1,048,000 tons in August.

For the second time in two weeks the movement of all-rail coal to New England has fallen below the 1919 level. Cars forwarded to New England through the five Hudson gateways of Maybrook, Harlem River, Albany, Rotterdam, and Mechanicsville are reported at 4,926, during the week ended Sept. 25. In comparison with the preceding week this was a decrease of 461 cars, or 9 per cent. It was less by 236 cars than the movement during the corresponding week of 1919.

CARS BITUMINOUS COAL FORWARDED THROUGH HUDSON GATEWAYS DESTINED FOR NEW ENGLANDa

Week Ended	1920	1919
Sept. 11.....	5,044	4,795
Sept. 18.....	5,824	4,885
Sept. 25.....	5,387	5,790
Oct. 2.....	4,926	5,162

ANTHRACITE

Shipments of hard coal for the week ended Oct. 2, amounted to 1,804,000 net tons, according to report of the Geological Survey. Production is now back on a normal basis as the week's output compares favorably with the figure of 1,818,000 tons produced in the last full week before the strike. A new walkout of the men in the Pittston district was of short duration, the miners returning promptly an action taken by the Pennsylvania Coal Co., in discharging the contractors. Abolition of the contract system has been the main issue in this district.

The Geological Survey gives total anthracite production in 1919 as 78,502,000 gross tons, a decrease when compared with 1918, of 11 per cent. The decrease occurred almost entirely in the steam sizes and was most marked in the case of the washery product. The product obtained by dredging increased. The number of men employed rose from 147,121 to 154,686 largely as a result of demobilization. The average number of days worked was 266.

Reports From the Market Centers

New England

BOSTON

Market Is Quiet—Softening Trend in Prices—Labor Situation Is Easier—Railroad Buying Still a Feature—All-Rail Movement Continues Good—Tidewater About Normal—Anthracite Outlook Seems More Hopeful.

Bituminous—The market here is almost featureless. There is only a light scattering demand for small buyers. Textiles and many other industries have so curtailed production that present reserves of fuel are ample. Those who have coal due on low-priced contracts are insistent upon deliveries but should the gate open and coal pour in on commitments of early spring there would certainly be a lot of cancellations.

There is little chance now that this dullness will be relieved during the next few weeks. The railroads are moving coal in record time. Uneasiness over the traffic situation seems to have entirely disappeared and there seems no inducement for buyers to enter the market.

Unmistakable signs of softening prices have been observed the past few days. At first hand there is not yet so much change but for more than two or three middle houses to participate is becoming difficult. It is noticed that operators are again trying to get in touch with New England houses. Car supply is adequate, and those grades that are not in demand for export are frankly seeking a market. Sales have been made at 50c. less than a week ago.

The flurry over wages at the mines seems to have blown over. The slackening in so many industries has released numbers of men whose usual employment is in the coal fields, and it is beginning to be realized that this fall would be no time to reopen the wage scale agreed upon last spring.

The present market level is sustained largely through railroad buying, in addition to the demand for export. The two situations remain about the only props for steam coal prices. For special grades certain of the roads have paid in excess of \$10, and others are buying inferior coal rather freely at around \$8. With assigned cars still in effect it is hard for the trade here to see why these moves are necessary.

Movement all-rail is fairly well sustained on the September average. This is about 70 per cent of what was coming forward in July but it is enough to care for New England requirements. There is but one embargo in effect, that against movement to the Boston & Maine via D. & H. Mechanicsville.

For the benefit of those who cry out about the tonnage for export it is interesting to notice that figures for recent weeks show that the total tonnage offshore from the Atlantic ports is but little more than the combined shipment to New England alone by rail and water for the same period. It is clear under present conditions that 500,000 tons per month is fuel enough to take care of this territory, notwithstanding all the large figures that were used early in the season.

At the loading ports coal is available in about normal volume. The excess of high volatiles at Baltimore has gradually been absorbed, largely by the railroads, and at New York and Philadelphia coal on hand is sufficient to care for boats as they arrive. The Hampton Roads situation has also improved; there is less steamer delay and daily receipts are more nearly uniform.

Current quotations on bituminous at wholesale range about as follows:

	Clearfields	Cambrias and Somersets
F.o.b. mines, per net ton	\$8.00@ 9.25	\$8.75@10.50
F.o.b. Philadelphia, per gross ton	11.60@13.00	12.45@14.40
F.o.b. New York, per gross ton	12.00@13.40	12.85@14.85

Anthracite—The anxiety last week due to the strike in the Wyoming district is somewhat allayed through the resumption of mining. Retail dealers here are much disturbed, however, over the extreme slowness with which deliveries are made.

The 3-ton provision still applies on all orders at retail, whether to households or to municipal institutions, and every effort is being made to spread present stocks where they will do the most good.

Tidewater

NEW YORK

Anthracite Production About Normal—Domestic Shortage Being Felt—Independent Prices Are High—Little Spot Bituminous Available—Demand Is Off, but Prices Are Firm—Little Free Coal at Piers.

Anthracite—Practically all the mines are now in operation. About all of the strikers have returned to work and with the cars which were diverted to the soft coal fields now being returned, production is getting back to normal.

The tonnage loss due to the strike is estimated in the neighborhood of 2,000,000 tons, which cannot be made up during the present season, and consumers as well as coal-men will have to make the best of a bad situation.

With tonnage coming from the mines

once more it seems that every one wants to be taken care of immediately. Each buyer has some fear that his order will be overlooked if he does not keep after his source of supply with sufficient vigor. The sales agents, as a result, are having a strenuous time trying to convince their customers that no favoritism is being shown in distribution.

Retailers are also having similar experiences and it is now realized that the Fuel Administrator's rule of two-thirds deliveries on the first round had much to commend it. If the rule had been followed this year the chances are that every customer would have some coal ere this. As it is, the available supply has been distributed very unevenly, although all customers could be taken care of if they would forego their preference as to sizes. There is quite a little nut coal in stock but very little stove and egg.

Retailers are not buying much of the independent coal at top prices. With a careful allotment of independent and company coal secured at reasonable prices it is thought that the situation can be tided over until the Lake season closes and the usual diversion to this market takes place.

Dealers along the line who need coal badly are paying upward of \$14 for a limited tonnage that is now available to the highest bidder. The larger steam sizes are strong and active while barley is plentiful and in poor demand.

Quotations for company coals, per gross ton, at the mine and f.o.b. New York Tidewater, lower ports are:

	Mine	Tidewater
Broken	\$7.60@ \$7.75	\$10.21@ \$10.36
Egg	7.60@ 7.75	10.21@ 10.36
Stove	7.85@ 8.10	10.46@ 10.71
Chestnut	7.90@ 8.10	10.51@ 10.71
Pea	6.10@ 6.55	8.57@ 9.02
Buckwheat	4.00@ 4.25	6.47@ 6.72
Rice	3.00@ 3.50	5.47@ 5.97
Barley	2.25@ 2.50	4.72@ 4.97
Boiler	2.50@ 2.75	4.97@ 5.22

Quotations for domestic at upper ports are 5c. higher on account of difference in freight rates.

Bituminous—The responsibility for the continued high prices are attributed by some who have studied the matter to Service Order 10, combined with the heavy export shipments, although it was thought for a time that the anthracite strike and the threatened strike of English miners had something to do with prices continuing on a high level.

After the requirements of the Lake and export trade have been met and contract obligations taken care of there is not much free coal left to break the market even in the face of a limited spot demand.

Since the slump a few weeks ago trade interests have been somewhat cautious about buying coal in the region and shipping it to Tide to sell on the open market, and as a result coal handled over the piers has fallen off in demand sharply. There is comparatively little free coal at the piers or afloat, this being particularly true of the better grades—there being days when buyers were unable to locate any Pool 9 and very little Pool 10 coal.

What Pool 9 coal is to be had is usually disposed of at \$14.75@15 along-side while on Pools 10 and 11 the bulk of the sales are \$14@14.50 per ton. Lower grades are to be had at prices down to \$13.50.

At the Pennsylvania R.R. mines Pool 10 coal has been around \$10@10.25 and about a quarter less on the B. & O. Pool 9 has been quoted \$10@10.50, Pool 71 \$10.50@10.75 and Pool 11 \$8.75@9.25, while Pool 34 has been strong at \$10.50@10.75. On the lower grades the price range is from \$8 up.

PHILADELPHIA

Strong Demand for All Anthracite—Some High-Priced Coal Offered—Steam Sizes All Taken—Bituminous Demand Strong, Especially at Tide—Little Change in Prices.

Anthracite—There is no lessening in the demand for all of the family sizes. Unfortunately the dealers are not getting the amount of coal needed to meet current requirements. They are spreading out the few cars they do get to the greatest advantage. The outside markets are getting the bulk of the production and will continue to do so for some time to come.

So far as production is concerned the mines are close to normal, although at times there is just the least tendency to a shortage of cars. At no time since the last suspension has the car supply been equal to the early days of summer. However, this is not serious and there is every reason to believe that all mines will have sufficient empties in the course of the next week or two. A new walk-out in the Pittston district has further hampered production.

All sizes are in strong demand. Egg and pea which were somewhat laggard in the late summer have again reached the point where there is very little chance for either size to accumulate in the yards. Inasmuch as stove and nut are the most wanted sizes we hear occasionally of offers of this coal for sale in one or two car lots at a price of \$13@14 at the mines. Even though a few sales may have been made locally at these prices it is far from indicating a price trend, as such purchases have only been made to meet some particularly pressing business.

Steam trade is close to top notch. All shippers are in receipt of inquiries for spot coal in all sizes, even including barley. The point has now been reached where the amount of free coal is becoming limited. There is a good business in all the steam sizes at Tide, but this is mostly on business closed some time ago. On such new trade as might be taken on buckwheat the mine price is close to \$5.

Bituminous—The demand for spot coal keeps up and some buyers are actually in sore straits for additional supplies. The complaint generally is that while they have notices of shipments from the mines the railroads are often two weeks in making the deliveries.

The export trade is developing added

strength and the amount of tonnage consigned to the local piers comes close to being the heaviest on record. Probably the bulk of this business is on the high-volatile coals. On the best Pennsylvania gas grades the prices have been \$11@11.50 per net ton at mines. The Fairmont coals have kept close behind with the bulk of the sales closed at \$10.75.

Railroads are calling for quite heavy shipments and it is believed they are making extra efforts to lay by a stock for the season of bad weather. There is a general tendency throughout the trade to take steps to increase stocks upon the ground.

Concerns with contracts were recently notified that in accordance with the recent wage settlements their contract prices had been increased. These increases ranged from 30@50c. a ton and in some few instances there was an inclination on the part of the buyer to question the increase. Consumers report that their contract shipments continue quite good.

Prices on good steam coals on the spot market run from \$9.75@10.25 for the Pool 10, with Pool 11 bringing \$8.75@9.50. Pool 18 can be had at \$8 at the mines. There is plenty of spot demand for Pool 9 coal but this grade is almost impossible to get, as the bulk of the production is absorbed on the various preferential orders.

The car supply recently has been reported fairly good, although the trade is beginning to feel the real effects of the diversion of the many thousands of cars which during the anthracite strike had been used in the bituminous trade.

On the B. & O. it is believed the average distribution of cars recently has been about 30 per cent of rating. Shippers complain that the movement of loaded cars is particularly slow despite the most favorable weather conditions of the year. The Penn. R.R. allotment has been about 40 per cent.

There is some uneasiness felt in the trades, especially that portion using gas coals, at the request of certain interests in the West that diversions be made of this grade to help out those districts. This has also had a tendency to hold prices strong on these grades.

BALTIMORE

Lessened Car Supply Stiffens Bituminous Demand—Prices Advance—Congestion at Tide—Genuine Concern Now Felt About Hard-Coal Distribution—Some Dealers Jacking Up Prices.

Bituminous—The market has tightened and there is now little prospect of another downward movement on prices, which with best coals selling at \$10.50@11.50 a net ton f.o.b. mines, are 50c.@1 above a week ago. Several things are operating to this end. One has to do with the car supply, which continues in less satisfactory form than some weeks ago. After the opening days of each week, when a record movement of empties on the roads makes toward a good run following the

Sunday periods, there is a drop to between 60 and 70 per cent on most days on Eastern lines. In some cases it has gone to the 55 per cent class. The daily loadings show some improvement despite this condition, and are now around 3,500 cars on the Baltimore & Ohio R.R.

Another cause of the tighter market has to do with the growing demand as cooler weather gives consumers warning that they should have reserve supplies on hand to meet the calls of wintry weather, which is likely to further hold up transportation.

The local shipping situation has considerable to do with the case, as there is a new jam of ships in the harbor waiting for coal cargoes or bunker supplies. At this writing between 40 and 50 ships are at the Curtis Bay and Canton piers awaiting coal cargoes, while a number of other ships with general cargoes are delayed in sailing because of lack of bunker coal. The supply at the local pool for the first time in months has dropped on some days below 1,000 cars, while the dumpings are running around 700 cars. One day's record the past week at Curtis Bay alone was 537 cars of coal.

The big spurt in export movement the last part of September brought that month close to the record of over 490,000 tons made in August. With three cargoes still not officially tabulated in the total for September the loading showed 472,415 tons.

Anthracite—There is now genuine concern here over the hard coal situation. True, the run is better to the city as compared with July and August, but is far below the amount needed and hundreds of cellars are still unfilled with coal. In some blocks of the city not a single house has a ton of coal, while in others only two or three houses in a dozen have fuel.

The demand for fuel has now gone in many cases beyond a question of price and it is not strange that some dealers are reported as charging above the recognized schedule for retail sales. The larger concerns are discouraging this, but some dealers who put on a retail premium are claiming that right because they cannot get company priced coal and must pay extra on all they secure from independent sources.

Lake

MILWAUKEE

Lake Receipts Fall—Coal Shortage Threatens—Public Urged To Conserve Fuel—Prices Are Firm.

Lake receipts of coal, which maintained a hopeful gait during the month of September, have slowed up materially and the October record to date is far from reassuring.

State institutions are feeling the pinch, only about 15,000 of the neces-

sary 45,000 tons having been received thus far. The state is paying \$2.45@ \$6 per ton for soft coal at Western mines.

It is now reasonably certain that the rail supply will have to be kept at a top-notch gait the coming winter if suffering is to be averted. Public utilities are displaying signals of distress in the form of paid advertisements in the newspapers, urging the strictest conservation on the part of the people. Coal prices in Milwaukee continue unchanged.

Statistics compiled in the United States Engineer Office show that to meet the average receipts of coal in the entire Northwest by Lake for the past 3 years by Dec. 1 would require total receipts daily of 175,748 tons.

It will require 36,929 tons daily to supply the deficiency in the Milwaukee district. The September record gives an average of only 18,633 tons. Figures for the other Lake districts are not at hand, but it can be reasonably assumed that these will not show any greater daily ratio than the record of the Milwaukee district. The average daily receipts at Milwaukee during October thus far are only 17,499 tons. The receipts to date, since the opening of navigation foot up 600,572 tons of anthracite and 1,537,171 tons of soft coal.

BUFFALO

Bituminous Situation Unchanged — Prices Mostly Hold—Buyers Are Not Taking High-Priced Coals—Anthracite Shortage Only Temporary.

Bituminous—Prices have held better than predicted, though at the same time the movement is light. Jobbers have about given up searching for low-priced coal for they have no market for it. Consumers seem determined to hold off till the price comes down.

With miners getting a large part of the entire receipts and clamoring for more pay operators consider it would be foolish to come down in price till some weakening is shown on the part of labor. It is not pretended that anything of the sort is taking place, so operators hold to prices as tenaciously as possible. The Buffalo trade believes that the consumers will win and that before winter. A leading jobber is on record as saying this week that prices are bound to be lower soon.

The shipper who has a good lot of low-priced contracts and is getting a fair amount of coal out of them is the king of the trade, for the shipper who used to be making all sorts of money selling coal to consumers at \$12 a ton and perhaps more is just now not active, unless he, too, has workable contracts. The great part of business now is falling into line.

At the same time the price of gas coal and for the most part smithing also, has not come down much. They are selling at \$11 or more at the mines. The car supply is fair and improving.

Anthracite—Supply was running up fast and had about arrived at normal,

when it was announced that men of the Pennsylvania Coal Co. at Pittston were out again. A good part of them had been out most of the summer but they went to work when the late "vacation" came to an end and it was hoped that all difficulties were past. While the situation is no worse than it was through the summer it is not good.

The city is more or less alarmed over the shortage. It is hard to get a supply and nobody knows when the situation will improve. At the same time the shippers see no great difficulty unless there is still more labor trouble. Their policy is to cut the city short as long as the Lake trade is open. When that shuts down the city can be filled up in a fortnight.

Prices remain as before on the basis of \$13.25 for stove and chestnut and \$13 for larger sizes net at curb. The Federal Grand Jury at Canandaigua ordered a reduction of 10c. a ton on retailers' charges, but nothing has been done about it, as no official notice has been received. The charges were \$2 net, with putting into cellar extra. Acting Mayor Kreinheder has called the anthracite shippers to his office on the 11th for a conference when the matter will probably be taken up.

Lake—Shipments for the week were 120,700 net tons, of which 46,500 tons cleared for Milwaukee, 39,100 tons for Duluth and Superior, 15,000 tons for Chicago, 14,100 tons for Ashland and 6,000 tons for Fort William. Shipments to October were 2,412,761 tons, as against 2,841,018 tons to same date last season.

Freight rates are strong on account of lack of tonnage, at 85c. to Chicago, 75c. to Milwaukee, and 60c. to Duluth, Fort William, Ashland.

Coke—This market is always rather spasmodic so far as the city jobbing trade goes as the large consumers depend mainly on their contracts. Jobbers quote \$18.50 for 72-hour foundry, \$17 for 48-hour furnace and \$14 for low grades, f.o.b. ovens, to which must be added \$3.24 freight.

CLEVELAND

Northern Ohio Cities Guaranteed Coal Under New Agreement—No. 8 District Labor Troubles Allayed—Car Supply Better and Operations Improve—District Attorney Probes Coal Price—Market Weakens.

Bituminous—Hope is entertained that the problem of tiding northern Ohio communities over in the matter of emergency coal supplies until the end of the Lake season has been solved by the agreement reached at Washington between the Interstate Commerce Commission, retailers, mine operators, railroad men and representatives of chambers of commerce. Under the new plan the railroads have undertaken to supply 800 cars of coal for domestic use daily to the cities in question. Cleveland's allotment is nearly 150 cars. For weeks the daily average has not exceeded forty cars. Definite assurance is now given by the roads that through increased efficiency and strict

enforcement of priorities cars in sufficient quantities will be available.

The unauthorized strike in the No. 8 District which threatened to disrupt production and check improvement in the coal situation has ended. Mine operations are now about 70 per cent of mine capacity. Operators report the car supply and the efficiency of railroad labor notably improved. Supplies of steam coal continue to increase and the market has weakened to around \$7.50@ \$8 for spot coal.

Operators, retailers and brokers in Cleveland and northern Ohio are receiving questionnaires from the Bureau of Investigation of the Federal District Attorney's office. If provisions under the Lever Act prohibiting unreasonable and exorbitant prices are being violated. At the District Attorney's office it was declared that prices were assumed to be fair in the main, although reports indicate to officials that in some cases retailers are paying more than the cost of production warrants. If the coal men refuse to comply with requests for information subpoenas are threatened. No attempt will be made by the Department of Justice to fix a price for coal.

Pocahontas and Anthracite—Stocks of Pocahontas and anthracite remain at low ebb, and nothing but run of mine Pocahontas is available. With the first taste of coal weather consumers are swamping retailers with orders. Deliveries are weeks behind.

Lake—The Washington plan just announced is designed to stimulate Lake shipments as well as shipments to local points. During September the Lake movement fell off considerably. Total for the month was 3,941,867 tons as compared with 4,160,500 tons in August. For the season up to Oct. 1 the movement to the Northwest has been 14,604,393 tons, against 17,681,223 tons for the same period in 1919. Better receipts at Lake ports are reported for October and continued improvement throughout the month is expected. It is hoped to get at least 8,000,000 more tons to the Northwest this season.

Retail prices of coal delivered in Cleveland follow:

Anthracite—Egg \$16@ \$17, chestnut and stove \$16.25.
Pocahontas—Shoveled lump \$16, mine run \$12.50.
Domestic Bituminous—West Virginia splint \$13.25, No. 8 Pittsburgh \$12, Millfield lump \$14.50, Cannel lump \$15.
Steam Coal—No. 6 and No. 8 slack \$11@ \$12, mine run \$12.50, No. 6 3-in. lump \$12.50.

MINNEAPOLIS

Prices Are Unchanged—Greater Rail Efficiency Sought to Overcome Shortage—Inadequate Supply in Outlying Districts.

There remains some 6 or 7 weeks of Lake navigation, in which it is necessary to ship in 6,000,000 tons of commercial coal. It may be possible to move 1,000,000 tons a week to the docks on Lake Superior but by all the performance of the present season it is exceedingly improbable.

It may be set down as assured that there will be a serious shortage of soft coal on the docks, also a smaller

shortage of anthracite. The big task at present is to confine this to the smallest possible amount. Hard coal will probably prove nearly sufficient, if there is a reasonable tonnage moved in the remaining weeks.

The only way that this shortage can be overcome is by increasing the tonnage from Ohio, Virginia and Pennsylvania mines or by increased tonnage from other points, Indiana, and Illinois being most likely; or by securing tonnage from sources not commonly drawn upon. The all-rail stocks from Indiana and Illinois will be called upon to the utmost. But they are contingent upon car supply, and it is lack of cars that has caused all the trouble in getting coal from the Eastern mines.

The third contingency, that of securing from sources not commonly drawn upon, will be resorted to. Unfortunately, the same causes which prevented them from supplying coal to the Northwest in the past are likely to continue. There is some coal coming to the Twin Cities from Montana, but it is doubtful if the total tonnage will amount to much.

The solution is one of transportation. By heavier loading, better handling through terminals, quicker return to service, the shortage of cars can be offset. Two prominent roads operating in the Northwest are working upon their organizations to attain greater efficiency. At a recent conference in Washington, rail officials gave promise of improved transportation facilities, to provide heavier Lake shipments.

A survey through the Northwest reveals that the interior is in very bad shape. Neither hard coal nor soft has been received in any quantity. Some communities report from 15 to 30 per cent of the required amount in consumers' bins. Dealers' yards are generally about cleaned up. Some towns have had no coal for weeks. An order of the Interstate Commerce Commission prevents public service corporations from stocking in advance of their current needs, which means that all are running without a reserve stock.

Inland West

DETROIT

Shortage of All Grades Continues—Domestic Demands Bound—Appeals Made for Priority to Increase Shipments for Michigan, Ohio and Indiana.

Bituminous—With prevailing temperatures making the use of domestic fuel desirable coal shortage is making it almost impossible for dealers to meet requirements of their trade. While efforts of the railroads and operators are concentrated on increasing Lake shipments, the all-rail movement to Detroit and other points in Michigan remains at an unsatisfactorily low level.

There is an active inquiry from steam and domestic consumers, which jobbers and retailers are able to meet

only in part. Within the last few days hope of improvement has been aroused by an application presented to the Interstate Commerce Commission, requesting an order for priority of service for shipment of about 2,000 cars daily into Michigan, Ohio and Indiana. The plan offered does not contemplate reduction of Lake shipments but is to be rendered effective by the railroads increasing the car supply at mines, and is designed to supply the urgent need for coal in the interval before the end of Lake navigation. A favorable decision is expected.

With the small volume of present shipments there is almost no free coal in and around Detroit. A considerable proportion of the supply is being sent in from Indiana and Illinois mines, with only a small amount of the better grade coal from Ohio and still less stock from West Virginia and Kentucky mines.

Anthracite—Shipments of anthracite continue disappointingly small. Only a few of the retail dealers have been able to get any supplies and household consumers are finding it virtually impossible to get coal ordered months ago.

The situation is rendered more unsatisfactory by the circumstance that dealers are unable to offer any assurance that they will have coal later. The deficit in anthracite increases the demand for bituminous as a substitute, though use of the latter will prove a serious hardship to many whose heating equipment is designed for the burning of hard coal.

Lake Trade—Efforts to increase Lake shipments to 1,000,000 tons a week have proven unsuccessful since early in September and the season movement to date is about 3,000,000 tons less than for the similar period last year.

INDIANAPOLIS

Uncertainty of Conditions Has Not Affected Local Market—Prices Are Firm—Car Supply Improves, but Labor Situation Is Bad—New Ruling To Help Domestic Trade.

The day following the announcement of the coal commission that prices on various grades had been fixed, coal was being sold at figures far above those fixed by the commission and every evidence shows that coal men intend to fight to the limit the power of the commission. Indiana coal is retailing at \$10@12.50 a ton, while the commission's prices are about two to three dollars lower.

One of the chief causes of continued high prices and prevailing scarcity is the fact that the entire Clinton field has been tied up for more than a week by miners refusing to work until the companies cut the price of coal to them. This has lowered production materially.

The car situation is considerably better, but operators are convinced that unless the Clinton field returns to work the surplus cars in the state will be sent to other fields where the miners are more inclined to work.

It is the general belief that with

severe weather and a suspension of Lake shipments the coal situation in Indiana will be greatly relieved. The domestic predicament will also be greatly benefited by the recent ruling of the Interstate Commerce Commission extending the preferential order for coal-carrying equipment, and the allotment of 500 cars per day of domestic fuel for this state.

ST. LOUIS

Local Steam Market Declines—Domestic Prices Firm with Little Coal Available—Railroad Fuel Orders Are Heavy.

Curtailement in manufacturing has lowered the demand for steam coal to the extent of \$2 in the last two weeks. Declining shipments to Michigan and intervening territory have made an ample tonnage available for St. Louis. In districts west of here steam fuels are still scarce on account of restrictions.

Domestic coal is hard to obtain and the situation is unimproved. Some Cartersville coal is being received, also a good tonnage from Mt. Olive, but only a limited tonnage from Standard field.

Retail prices in St. Louis are: Cartersville, \$9.50; Mt. Olive, \$8.50; Standard, \$7.50. No anthracite, smokeless or coke is available.

Standard mines are taking heavy orders for railroad fuel, owing to the depressed steam demand. Commercial mines are running on less than 50 per cent car supply. The labor situation is satisfactory, although men refuse to work to capacity in the railroad mines, where cars are more plentiful.

Mt. Olive reports better supply, more adequate labor and heavy railroad fuel orders. A slight improvement is shown in the Cartersville field. However, inadequate transportation facilities on the Illinois Central and Iron Mountain roads still hamper production. Labor troubles are insignificant.

Standard prices range \$4.25@7.50 for domestic and \$4@5 on screenings. Mt. Olive lump is \$4@5. Cartersville is \$4.25@8.

CHICAGO

Production Is Increased—Car Supply Improves—Prices Have Eased Considerably—Plans Laid To Effect Improved Distribution.

There was a marked improvement in production during the week ending Oct. 9, due to increasing car supply, which probably averaged 60 per cent. There has been some disarrangement of distribution because of priority assignment of cars under Service Order 16. The abrogation of Service Order 16 as of Oct. 15 will improve distribution and with continued improvement in car supply, which now seems almost certain, production ought to build up in October to an average of 75 per cent.

Quite a little easing off in prices is noted. There is no longer anxiety on the part of consumers for the high priced so-called free coal. Prices on this class of coal have eased off as much as \$2 a ton on some grades. Improved

car supply will continue to bring out an increased proportion of contract coal, which will doubtless further reduce the prices of free coal.

There is good co-operation among all branches of the industry. The U. S. Attorney for the Chicago District has outlined a plan to work with a consolidated committee of producers, wholesalers and retailers to effect improved distribution of coal. With the help of these practical men the U. S. attorney will doubtless be able to considerably relieve the anxiety of consumers, especially buyers of household coal.

The labor situation is quiet. With no general question at issue with labor at this time the chances are that there will be none and that improvement in production will continue.

COLUMBUS

Reduced Car Supply Strengthens Market—Domestic Trade Continues Strong—Prices Are Maintained—Domestic Receipts Assured by New Ruling.

Reduced car supply has been reported from practically every producing field in the state. This has reduced the output to about 50 per cent of normal and has tightened the market. Prices have again come back to former levels.

Lake trade is progressing fairly well with a good tonnage moving from Ohio and West Virginia mines. While car shortage is cutting into the movement in certain producing fields the net result has not been bad.

Steam business is still strong, due mostly to lack of tonnage for commercial users. The falling off of industrial activity has had but little effect on the trade up to date, but this is expected to count soon. Michigan industrial centers have been supplied with Indiana and Illinois coal and this is reducing pressure at that point. Steam prices, which were weak, have regained a large part of the lost ground. Railroads are taking a good tonnage, while public utilities are also absorbing a larger quota.

Hocking lump retails \$9.50 @ \$11 while mine run is almost as high. West Virginia Splints and Kentucky grades sell \$10.50 @ \$12 and even higher. Pocahontas is scarce and sells \$12.50 @ \$15, delivered.

Prices at the mines for coals used in Central Ohio are:

Hocking lump.....	\$6.50 @ \$8.50
Hocking mine run.....	5.50 @ 8.00
Hocking screenings.....	5.25 @ 7.75
Pomeroy lump.....	6.75 @ 8.50
Pomeroy mine run.....	6.50 @ 8.25
Pomeroy screenings.....	6.00 @ 8.00
West Virginia Splints, lump.....	6.50 @ 8.50
West Virginia Splints, mine run.....	6.25 @ 8.00
West Virginia Splints, screenings.....	6.00 @ 7.75
Kentucky lump.....	6.50 @ 8.25
Pocahontas lump.....	7.00 @ 9.00
West Virginia Splints, screenings.....	6.00 @ 7.75

The Interstate Commerce Commission has extended its preferential order for gondola cars for coal mines to apply to all states east of Montana, Wyoming, Colorado and New Mexico. In behalf of the domestic situation in Ohio, Michigan and Indiana an allotment of 1,800 cars daily has been made for those states. Ohio will receive 800 cars of domestic daily.

In order to bring about this result and maintain Lakes and other priorities, 2,110 additional cars will be secured from other lines of industry and hereafter no open-top equipment will be for other than coal loading, except upon a showing of public interest.

West

DENVER

Considerable Agitation Over High Prices—U. M. W. Firm on Union Recognition—Car Shortage Curtails Production 25 Per Cent.

Boulder newspapers have agitated the price question to the point where business shows a temporary setback, even in the face of implied threats by officials of United Mine Workers that demands for union recognition may unavoidably run up operating expenses through disorganized production.

If the union demands are to be made an issue, developments are due about Oct. 15, although the Colorado Fuel & Iron Co., the largest bituminous operator in the state, in continuing to pursue its policy of refusing union recognition, obviated difficulty when the pay of workers was advanced \$1.50 in accordance with increases given workers in lignite fields. Some of the mines in lignite fields are under union contract. Trappers and boys got 82c. a day increase. The original increases, effective Sept. 1, were \$1.25 for workers and 82c. for trappers.

There has been no further advance in mine prices by the Colorado Fuel and Iron Co., which is retailing lump bituminous here at \$11.50, while similar Southern Colorado grades are bringing \$12 @ \$12.50. Louisville lignite costs \$5.80 at the mine and \$9.95 in retail markets; Weld County lump lignite, known as second grade, costs \$5 at the mine and \$9.15 retail, while Leyden lump brings \$5.25 at the mine and \$9.35 at retail.

In Sterling dealers believe the present prices mark the peak, and are hopeful. Lignite is selling \$10.50 @ \$14.50 retail. Operators have not yet attempted to make reply to the newspaper challenges.

Production in all fields in Colorado for the week ended Sept. 25 was 186,040 tons, 76.5 per cent of a possible full time output of 243,333 tons. Of the losses through lack of production, car shortage was equivalent to 22.4 per cent.

South

LOUISVILLE

Activity in Buying Is Renewed, Due to Lower Prices—Better Movement at Mines—Eastern Kentucky Coal Moves Freely Here.

As a result of the recent agreement to Eastern Kentucky operators, in many instances to a maximum price of \$6.

The question arises as to whether shipments to points out of the state or export will be limited to \$6, it being held that the Eastern Kentucky Federal District Court would not have jurisdiction over movement outside of its own district, but such regulation would probably result in coal moving outside to the detriment of the state consumer.

Prospects are for retailers getting a very fair supply of coal from now on, at prices well under those that have been in effect. One operator has sold coal to several retailers at around \$6.50 a ton during the past few days. It is held that most of the large operators will maintain the \$6 maximum level.

Western Kentucky coal may not move into the Louisville market as freely as it has been if prices are not reduced, unless the difference in freight rate and heavy unfilled demand cuts a figure, as \$6 at mine is a lower price than is being generally quoted in Western Kentucky.

BIRMINGHAM

Steam Sizes Ease Up Slightly—Domestic in Strong Demand—Car Supply Meets All Requirements—Production Gains Slowly—State Fuel Administrator Is Appointed.

Inquiry for steam coal in the local spot market has eased up slightly though the demand at this time is still far in excess of the amount of coal available. The tension has not been relieved sufficiently to cause a noticeable recession in prices, which range \$7.50 @ \$8.50 per net ton mines. There has been little or no improvement in the supply of free coal.

Domestic coal is in exceptionally strong demand, as no yards in this territory have been able to accumulate any stocks against winter requirements. Sales to consumers have kept coal moving off the yards of the retailers as fast as received. Many dealers are far behind on their deliveries. Retail prices range about \$8.50 @ \$13.25 delivered.

All the coal-carrying lines are now furnishing a good car supply and production is up to the highest notch obtainable under present labor conditions. Operations which have suffered practically no defections on account of the strike are not producing the full tonnage of coal which should be taken out by the men employed, due to their failure to work regularly.

Organizations have been strengthened numerically the past week by the return of old men to their positions and the importation of labor from other sections of the state.

A State Fuel Administrator has been appointed to provide for the distribution of coal within the state and the fixing of price thereon in emergencies such as now exists. A price schedule will be made for all coal mined in excess of contract obligations for state distribution and another for prices to be charged by retailers. The agreement will be effective until Feb. 1, 1923, prices to be relatively affected by any future wage adjustments.

News From the Coal Fields

Northern Appalachian

PITTSBURGH

Total Demand Is Unchanged—Steel Industry Buys Little Coal—Stocking Coal in Better Demand—Export Leads Market, but All Grades Are in Good Demand.

Demand for spot coal in the open market is as heavy as formerly, although there is a change in the alignment of demand. The iron and steel industry has practically disappeared as a buyer, through the double influence of its receiving better deliveries on contracts and from its own mines, and of operating under somewhat reduced pressure. In several mills this is on account of reduced demand for steel products.

On the other hand there seems to be more desire on the part of many consumers to stock up for the winter. Formerly there was little inclination to stock coal at the high prices ruling, declines being expected, but as the season of good weather is nearly ended there is more willingness to pay high prices for stock coal.

The common opinion in the trade now is that prices will experience little if any decline until after the Lake season closes. Whether there will be much reduction at that time will probably depend upon weather conditions, as affecting railroad movement. The inability of the railroads even at this late date to furnish full supplies of cars is regarded as making it doubtful whether they will be able to continue even their present service when the weather becomes inclement.

The Western Maryland Ry. embargo continues, and a recent wreck curtailed the amount of freight that could be moved over the road by special permit. Tidewater shipments accordingly continue at a low rate.

Export prices range \$1.50@2 above the ordinary market. Lake coal on the other hand is quoted at \$7.25@7.50, with a good movement on contract but little fresh demand. The spot market in general is quotable \$10.50 @ \$11 for best grades of gas and by-product and \$8.50@9 for ordinary steam coal, per net ton at mine, Pittsburgh district.

CONNELLVILLE

Car Supplies Poorer, Stiffening Market in Face of Lighter Demand—No Interest in First-Half Contracts—Price Decline Is Seen.

The spot coke market has stiffened a trifle since last report. While demand on the whole is lighter, supplies are much restricted, car supplies being very poor.

The Lake Erie is doing relatively well, the Baltimore & Ohio R.R. only fairly so and the Pennsylvania very poorly. The Pennsylvania seems almost entirely choked, with congestion at nearly all yards and apparently a great shortage of motive power. The Pennsylvania is reported to have furnished at times not more than 20 per cent of its quota of coal and coke cars to the Monongahela R.R. Coke over the Pennsylvania is held 50c.@75c. higher than over the other lines.

Production of pig iron in September in the iron industry as a whole was at 2.8 per cent higher rate than in August, while at the same time demand in the open market almost disappeared and prices began to soften. The outlook is that eventually there will be less demand for coke and the Connellsville market is more likely to decline from there being less calls than from there being increased production.

Interest in coke contracts for the first half of 1921 has entirely disappeared, if there ever was any real interest, except on the part of one or two operators who recently offered contracts at \$14 for furnace and \$15 for foundry. Prospects now are that \$10 would be the highest price consumers would seriously consider.

The spot market is quotable \$16.75@ \$17.50 for furnace and \$18@18.50 for foundry, per net ton at ovens.

The *Courier* reports coke production

in the Connellsville and Lower Connellsville region in the week ended Oct. 2 at 190,180 tons, a decrease of 12,660 tons. Production by the merchant ovens alone, however, increased 6,000 tons, from 74,500 tons to 80,500 tons.

UNIONTOWN

Car Supply Is Much Improved—Prices Are Steadier—Embargo Removal Permits Eastern Shipments.

Much improved car supply this week has stiffened the price situation in the local region, coupled with the fact that the Western Maryland embargo on Lake Erie loads has been removed, thus permitting materially larger tonnage for eastern shipment. The turn came just at a time when yard congestion, poor car supply and the oppressive embargo threatened the uninterrupted run of big production and high prices.

Late quotations showed Pool 34 selling at \$11 on the Baltimore & Ohio R.R. and \$10 on the Pennsylvania R.R. with steam coal on both roads \$8.75 at mines. Pool 44 coal was \$9.25 with by-product grades at \$10.25. After a spotty condition for a day or two, the market has apparently settled on these figures for the present. Both P. R.R. and Lake Erie furnace coke are firm at \$17@17.50, with foundry coke of the very best grade at \$18.50.

Little talk of coke contracts for the first quarter of 1921 is heard, operators apparently being quite content to take the chances of the open market. With mid-October here, this is figured to average high for the next 6 months.

Car placement for the first 5 days of the week was very high. On the Monongahela Ry. the coal placement averaged 70 per cent, with a total of 2,900 cars against requirements of 4,100. This was made up of 650 P. R.R. place-

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY

BITUMINOUS COAL

	1920		1919 (a)	
	Week	Calendar Year to Date	Week	Calendar Year to Date
Sept. 18b.....	11,654,000	380,912,000	11,253,000	329,663,000
Daily average.....	1,942,000	1,717,000	1,876,000	1,485,000
Sept. 25b.....	11,854,000	392,766,000	11,613,000	341,276,000
Daily average.....	1,976,000	1,723,000	1,936,000	1,497,000
Oct. 2c.....	11,348,000	404,114,000	11,518,000	352,794,000
Daily average.....	1,891,000	1,728,000	1,920,000	1,508,000

ANTHRACITE

	1920		1919 (a)	
	Week	Calendar Year to Date	Week	Calendar Year to Date
Sept. 18.....	699,000	9,859,000	1,665,000	59,041,000
Sept. 25b.....	1,655,000	61,514,000	1,760,000	60,801,000
Oct. 2.....	1,804,000	63,318,000	1,845,000	62,646,000

BEEHIVE COKE

United States Total

Week Ended		1920		1919	
Oct. 2	Sept. 25	Oct. 4	to Date	to Date (a)	
1920c	1920b	1919			
380,300	402,000	312,000	16,075,000	14,797,000	

(a) Less one day's production during New Year's week to equalize number of days covered for the two years. (b) Revised from last report. (c) Subject to revision. All figures in net tons

ments against requirements of 1,575, a 40 per cent showing, and 2,250 Lake Erie placements against requirements of 2,500, a 90 per cent record. This is the best in weeks. On the Pennsylvania branches the effect of Service Orders 19 and 20 has not yet been felt, a bare 6 per cent being placed on the Redstone and but 15 per cent on the Southwest.

Coke car supply for the past 5 days on the Monongahela Ry. has been a full 100 per cent, with about 1,800 cars representing placements and requirements. The Pennsylvania placed 505 cars against 780 required, while the Lake Erie placed 1,300 against 1,000, 70 and 130 per cent respectively. Pennsylvania placements on branches were about 50 per cent on both Southwest and Redstone.

Announcement was made this week of the establishment of scales at Smithfield on the Baltimore & Ohio R.R. to care for the tonnage originating in that region. This was weighed formerly at Connellsville.

NORTHEAST KENTUCKY

Slight Increase in Production — Lakes Quota Is Heavy — Little Free Coal Available — Domestic Demand Is Strong.

More coal was actually produced during the period ended Oct. 2 than during the preceding week, yet the percentage of production to capacity was smaller, there being a decrease of 5 per cent.

There was a heavier tonnage loss amounting to 103,000 tons. Production in the Northeast Kentucky field was thus not more than half of potential capacity.

Lakes drew a large part of the output, although at the same time the necessity of filling priority orders also used up much of the commercial fuel which might otherwise have been available for general distribution.

Export shipments by way of Charleston, S. C., were almost negligible. While there was a slight lessening of the demand for steam and by-product coal that was partly made up by an augmented demand for domestic fuel.

FAIRMONT

Sharp Decline in Car Supply — Railroads Absorb Heavy Tonnage — Little Coal Goes Elsewhere.

There was a most decided downward trend in production during the period ended Oct. 2, owing to a sharp decline in the car supply. Such a situation was in rather sharp contrast to conditions prevailing earlier in the month and there was no longer much doubt but what the idleness in anthracite fields during September had been responsible for the artificial spurt in the car supply in northern West Virginia.

At the very best, mines had no more than a 50 per cent run of cars. There was a marked shortage of equipment on the roads operating in the northern part of the state, the branch of the Western Maryland in the Fairmont region not having more than 50 per

cent supply at any time during the week.

There was rather a sharp slump in both Eastern and Western shipments. Lake and export shipments dwindled very perceptibly. Many roads were bent upon securing as large a supply of coal as possible before the new order relative to assigned cars went into effect.

Many of the smaller companies, in order to insure a steady car supply, have contracted their entire output to the railroads for the next six months, some of such contracts being at \$5.

EASTERN OHIO

Work Is Being Resumed, Following Strike—Cars Are Better—Prices Are Firm—Lakes To Get Coal in Larger Amounts.

Mines in the No. 8 and adjoining fields were about 50 per cent closed down during the week of Oct. 2 on account of the strike instigated by certain radical elements in the miners' organization on the question of pay for moving slate.

Such mines as worked were considerably affected by labor shortage owing to their men, who sympathized with the radical movement staying out of the mines. The men voted on Thursday to go back to work, but not many of the mines resumed operations until Monday, Oct. 4.

Some operators report that many of their men have not yet returned to work and production will probably show a shortage for the week of Oct. 9. Late reports show a resumption of operations on basis of about 70 per cent of capacity. Better car supplies aid an increasing production rate.

Prices still remain firm around \$6.50 @ \$7.00. There seems to be a feeling that there will be some reductions as a result of the decision in Washington on Monday of the railroads to carry out literally the program of 4,000 cars per day to the Lakes, as originally contemplated under Service Order 10 of the Interstate Commerce Commission.

Production for the week of October 2 was approximately 125,000 tons, of which about 30,000 went to the railroads.

Middle Appalachian

NEW RIVER AND THE GULF

Chesapeake & Ohio R.R. Car Shortage Reduces Output—Lake Shipments Slump—Scarcity of Free Coal Causes Price Advance.

Inadequate transportation facilities furnished by the Chesapeake & Ohio R.R. were chiefly responsible for reduced production in both districts. As far as the Virginian Ry. was concerned there was an improvement in the car supply. The reduced output offset to a great extent the volume of coal made available by suspension of the New England service order.

During the first 2 days of the week only was production in the New River field anything like normal, an acute shortage of empties during the remainder of the week seriously retarding output.

Mines received not much more than a 50 per cent car supply. Lake shipments were almost insignificant, most of the product going to Tide on contracts. Limited output left little free coal available. Shortage of cars made the demand all the more apparent and tended to stiffen prices somewhat.

Owing to the poor car supply for Gulf mines dependent upon the Chesapeake & Ohio R.R., operators were forced to be content with less than a 50 per cent run. However, the Virginian mines averaged about 75 per cent. Speeding up of dumping at Sewell's Point was a factor in bettering the Virginian supply. With the New England priority out of the way there was a broader market for Wind-ing Gulf production.

POCAHONTAS AND TUG RIVER

Car Supply Is Excellent — Demand Strong and Prices Are Firm — Lake Quotas Adjusted — Congestion at Tide Is Cleared.

Car supply of 100 per cent in the smokeless fields reached by the Norfolk & Western R.R. gave considerable impetus to production during the week ended Oct. 2. The only drawback was the refusal of a good many miners to work on the first and second days of the month, as is usually the case. Boats were more plentiful at Lambert's Point than had been true during previous weeks and dumpings were hardly sufficient to load all boats available. Insofar as the car supply in the Tug River field was concerned, loading was fully as good during the week ended the 2nd as it had been for the previous week.

While Tug River mines have been shipping 25 per cent of their daily rating capacity to the Lakes since Aug. 6, the percentage at times has amounted to 40 per cent of production, owing to labor shortage. However, with the Lake percentage cut to 11 per cent a good portion of Tug River coal will now be released for contracts and for old time customers who are badly in need of fuel. There was a very excellent demand for Tug River fuel, even aside from the demand for contract deliveries, and prices were firm.

As far as transportation facilities were concerned in the Pocahontas region, there was an upward trend to production. The usual idleness observed on the first of the month limited the output more than would otherwise have been the case, labor shortage losses exceeding car shortage losses.

Since the New England order was suspended Pocahontas and Tug River producers will share in meeting Lake requirements, so that the percentage of production for the Lakes required of the Tug River field has been reduced

and the percentage from the Pocahontas field has been increased.

There is more coal available now in the Pocahontas region for filling contracts as well as for the spot market, but tonnage is hardly sufficient yet to meet the continued strong demand in all markets.

LOGAN AND THACKER

Production in Strike Zone Improves—Logan Output Slumps With Poor Car Supply—Lake Shipments Are Small—Prices Advance.

Production in the Williamson field had reached a total of 75,000 tons, including portions of the field not affected by the strike, but even in the strike zone there had been an improvement in conditions. Operators were satisfied that mines directly affected by the strike would show for the month a total output twice as large as that for August. In the Williamson field as a whole, however, production had been curtailed during the week to the extent of about 95,000 tons. It was thought that with new men coming into the field such a loss would shortly be reduced.

Car shortage losses, naturally, were at a minimum. Virtually all of the coal produced in the Williamson field was being applied on contracts and in one instance at least a company had applied for an injunction to restrain organizers from attempting to unionize mines on the ground that it would prevent the company from filling its contracts.

Production was much below that of the previous week in the Logan district, owing to a curtailed car supply. By the middle of the week mines had not more than half enough cars. As a result of such inadequate transportation facilities, Lake shipments were extremely slim and numerous other restrictions upon shipments eastward rather narrowed the market for Logan coal, although the demand for all grades has been materially augmented and prices are therefore showing an upward trend.

KANAWHA

Car Supply Declines—Lake Shipments Are Reduced—Export Prices Lead the Market.

Car supply declined steadily during the week ended Oct. 2, although indications were, at the beginning of the week, for further improvement.

On Monday mines on the Chesapeake & Ohio R.R. had 3,000 cars and Kanawha district had a total car supply of more than 100 per cent. By Thursday it was only 52 per cent, so that mines were not able to operate on more than a half-time basis.

The car supply on the Kanawha & Michigan R.R. was even more discouraging, mines on that road having as low a supply as 32 per cent.

Of course, under the circumstances, Lake shipments were materially reduced. In general the larger portion of the output was billed to Western

markets. Little tonnage reached Tidewater or Inland East markets. The market was strong, especially in view of an increased demand for domestic fuel. Export prices were firm at \$10.50 with spot coal for Inland delivery probably about \$3 a ton less.

Southern Appalachian

WESTERN KENTUCKY

Strike Settled and Miners Return—Demand is Keen—Prices Are Slightly Weaker—Northwest Movement Good—Price Reduction May Affect This Field.

Western Kentucky miners' strike has been settled after some weeks. Drivers get an increase of \$1.75 a day, other day men \$1.50, loaders 11c. a ton, machine runners and assistants 3 per cent. The mines are again operating as close to capacity as car supply will permit.

Movement to Detroit, Chicago and various Northern towns is good and production of the field is sought, with movement much better as a whole. Prices are reported to range \$6.50@ \$7.50 a ton, some coal selling at above this level. Car supply is improved.

Western Kentucky is producing a good proportion of lump coal, which is in active demand for domestic use. Many mines, especially in Eastern Kentucky, are producing very little other than mine run.

Price restrictions in Eastern Kentucky may curtail movement to Louisville from the local field, as \$6 seems to be the figure at which operators in the former district will dispose of their output. This may necessitate a like reduction to enable Western Kentucky operators to compete.

Western

IOWA

Normal Production in State—No Reason for Local Shortage This Winter—Close of Navigation Will Remedy Present Situation.

Approximately 170,000 tons of coal are being mined weekly in this state, according to George Heaps, Jr., secretary of the Iowa Coal Operators Association. This average is as high as ever attained in Iowa, considering the many difficulties to which the coal industry has been subjected recently. This weekly output represents the combined tonnage of about 125 mines throughout Iowa.

Most of this coal is used by industries within the state, the mines showing a willingness now to serve the interests which have patronized them in the past. Less than 5 per cent of the coal leaves the state, and practically all going outside is sold in territory immediately adjoining.

It is believed that there is no danger of a coal shortage in Iowa this winter. The northern part of the state will be more subject to a shortage than the southern, if there is any deficiency. After Dec. 1, when the order granting priority to the northwest comes to an end, about one million tons of coal will be released for distribution each week throughout the Middlewest.

Communities in the East, as well as in states like Iowa, where shortages in supply for immediate use exist, are being provided for just as rapidly as the operators, working in conjunction with committees of local retailers, can make provisions. Consumers have been asked to aid in the problem of adequate soft coal supply by taking at this time only enough to last until the Lakes situation is cleared up.

COLORADO

August Production 1,042,593 Tons—Year 1920 Ahead of 1919 Period—Lack of Cars Curtails Production.

Coal production for August, bituminous and lignite, totaled 1,042,593 tons. Since Jan. 1, the mines have produced 7,995,983 tons, an increase of 1,339,125 tons compared with the corresponding period during 1919.

There were 12,827 miners and laborers employed in August. Considering the first 8 months of 1920, miners have worked an average of 137.9 days of a possible 243. Routt County's decrease by 119,560 tons bituminous production during the first 8 months of 1920, compared with activities during a corresponding period last year, was due chiefly to lack of cars.

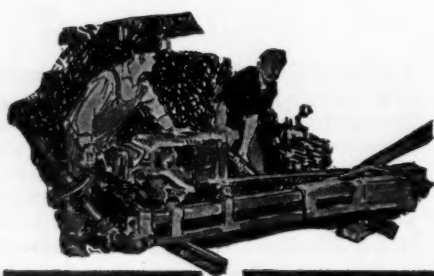
Production for the week ended Sept. 18 was 190,255 tons of a possible full time output of 234,671 tons, equivalent to 85.3 per cent. Car shortage conditions were equivalent to 12.1 per cent, or a loss of 36,562 tons.

WYOMING

Union Pacific Threatens Confiscations—Retail Price Is Boosted by Low Production—Miners Back Congressional Candidate.

The Union Pacific R.R. has notified the mines at Rock Springs that it expects the entire production for engine use for a while, or it will confiscate all shipments, according to the William Smith Coal Co., following advices from the Rolapp Co. in Salt Lake City. Utah mines are only working half time, and the Rock Springs mines less than full time, sending up coal on retail markets to \$12. Unusual traffic on the Union Pacific is the cause for greater consumption of engine coal.

An innovation in political campaigning was instituted when thousands of coal miners approved of a weekly assessment of 50c. each for two weeks for the candidacy of James Morgan of Cheyenne, farmer-labor candidate for congressman. Voluntary contributions to his expense fund may equal or exceed the funds of any one of the three candidates in the senatorial race.



Mine and Company News



ILLINOIS

Hallidayboro—The Jackson Coal Co., is completing a series of test holes which were drilled near here. It has not been announced as yet what the outcome will be, but it is the general opinion that a new mine is contemplated. The company recently experienced disaster when the large tippie, washer and re-screening plant and railroad chutes at the mine were destroyed by fire. A new steel tippie and head-frame has now been built, making a better and more modern mine than before the fire.

DuQuoin—Work is progressing at No. 5 mine north of here, which is being re-equipped and remodeled by the Boehmer Coal Co., with offices in St. Louis. Under the efficient management of Supt. Greenwood the mine will before long be ready to ship coal.

Lincoln—Miners have resumed work at the Citizens Mining Co. after a lay-off due to misunderstanding between the miners and operators over work on an old room or entry which was blown open by a shot. The miners contended there was a possibility of gas explosion as the result of the accidental opening of this old room and refused to work in the mine while the repair gang was busy fixing the opening.

Springfield—Presidents of all Springfield District sub-locals of the United Mine Workers have been urged by Stephen Sullivan, executive board member of District 12 to use their influence in keeping the men at work continuously until Nov. 15 so that fines imposed during the insurgent strike of Aug., 1919, might be refunded. This action followed advices from Frank Farrington urging the move.

INDIANA

Indianapolis—Articles of incorporation have been filed by the Durand Coal Co. The home office will be at Terre Haute, Ind., and the capital stock is placed at \$80,000. The company will mine and market coal and has as its directors J. P. Karshner, C. E. Van Slyke and J. B. Pfister.

The Farmers' Coal and Mining Co. has filed articles of incorporation. The home office will be at Terre Haute, Ind. Directors are James A. Kearschner, Epsey B. Yaw and Seth V. Hunt.

Articles of incorporation have been filed by the Glendora Coal Co. of Sullivan, Ind. The company is capitalized at \$300,000 and has secured coal leases on thousands of acres of land surrounding Sullivan. The directors

are John L. Baker, John A. Templeton, D. Frank Culbertson, William E. Baker, Gustav Riesmeyer, Jr., Alfred Brocksmith and Frank P. Emison.

KENTUCKY

Louisville—Operators of the Eastern Kentucky field are feeling more optimistic concerning the future of the field. The Louisville & Nashville R.R. has set aside money, something like four million dollars, for improvement of coal yards, terminals, switches, sidings, etc., for improving service into the field. There has been such an increase in number of mines and tonnage that present facilities are far from being adequate. Most of the money will be spent on the Eastern Kentucky and Cumberland Valley divisions.

Pineville—Judge Moss and sons have purchased the mine operated by Cul-ton, Yeager & Caton on the left fork of Straight Creek. It is understood that they are planning on increasing the output.

Messrs. Cawthorne & Watson are doing considerable development work on Dry Branch in the Lower Harlan field. It is said that they are planning on a production of about 500 tons per day from this mine.

The Banner Straight Creek Coal Co., with a capital of \$25,000, has been organized by J. E. Settle, N. R. Patterson and A. H. Gregory.

MISSOURI

St. Louis—The Consolidated Coal Co. has completed arrangements for the purchase of the Big Muddy Coal & Iron Company's mining interests. This involves something like 3 million dollars' worth of property. The purchase takes Mines 7 and 8 at Herrin, and 9 and 10 at Murphysboro. Some of the officials of the Big Muddy Coal & Iron Co., it is expected, will be taken over by the Consolidated Coal Co. The Consolidated already has one mine in Williamson County at Johnson City and 6 others in the Mt. Olive and Standard fields, giving them a total of 11 mines. Kingdon Gould of New York is President, W. J. Jenkins, Vice President and General Manager; A. W. Carr, Secretary and Treasurer. General headquarters are in St. Louis.

OHIO

Athens—The Pomeroy & Hocking Valley Coal Co., have leased a 2,000-acre tract from Frank Leifheit and Oliver Brandbury. Property is in the Thomas Fork territory. The company is a new

corporation, capitalized at \$25,000, and it is understood that work will be immediately begun on an extension of the Middleport and Northeastern R.R. to the property, a distance of less than a mile. A tippie with a capacity of 18,000 tons daily will be erected. A switch for 40 coal cars will be put in at the same time.

PENNSYLVANIA

Waynesburg—Executors of the Spencer B. Kent estate, V. Kent, of Waynesburg, and H. C. Wood, of Pittsburgh, sold to J. G. Patterson, a prominent coal operator of Pittsburgh, two tracts of coal land in Franklin township for a price of \$300 per acre.

The Whiteley Coal Co., has purchased one-sixth interest in the coal underlying a tract of land in Franklin township, containing 134,781 acres for a consideration of \$10,052.09. The same company has also purchased from John E. Hess, of Uniontown, a tract of 68,678 acres in Whiteley township; the one-half interest in a tract of 17,955 acres located in the same township, and one-sixth interest in the coal under three tracts of land located in Franklin and Whiteley townships for a total consideration of \$37,109.86.

UTAH

Salt Lake City—Commissioner Tallman, General Land Office, upheld the decision of Gould B. Blakeley of the local land office in the case of O. B. Barglund and Ludvig Ludvigson versus George F. Livingstone and Geo. W. Ivory, in which the former claim the title to valuable coal lands in the Gunnison Valley. In view of the great value of the lands it is probable that Berglund and Ludvigson will appeal the case to the Secretary of the Interior. The lands in dispute are located within a short distance of a railway and their possession has been a matter of dispute for several years.

WEST VIRGINIA

Charleston—Companies, resident and non-resident, organized in West Virginia during the month of August had a combined capitalization of \$11,419,000, the aggregate capitalization of resident corporations alone being \$9,819,600. There were in all 39 resident coal companies organized, that being the largest number during any single month in recent years, the capitalization also being larger than that for any other month in the same period. The large number of companies formed reflects not only continued

growth of the industry in West Virginia but also a healthy condition of affairs within the industry. As there were just 100 new companies chartered for all purposes in West Virginia during August, it will be observed that coal companies constituted nearly half of the new companies chartered. The largest company organized was the Low Volatile Consolidated Coal Co., in which C. H. Mead and others had a leading part, this company having a total capitalization of \$3,000,000.

Other companies organized during August, together with their capitalization, were as follows:

Wilmore Pocahontas Coal Co., Iaeger, \$50,000.
Big Four Coal Co., Fairmont, \$250,000.
Iris Coal Co., Buckhannon, \$50,000.
Sandberg Coal & Land Co., Charleston, \$500,000.
Boone Block Mining Co., Huntington, \$150,000.
Lick Run Collieries Co., Kingwood, \$200,000.
Daubenspeck Coal & Land Co., Jesse, \$100,000.
Jerry Run Coal Co., Grafton, \$75,000.
Masontown Coal Co., Masontown, \$25,000.
Apex Coal Co., Clarksburg, \$50,000.
Houghton Gas Coal Co., Charleston, \$50,000.
Glenn Coal Co., Charleston, \$100,000.
Big Eagle Mining Co., Huntington, \$400,000.

Gravine Coal Co., Hinton, \$50,000.
Stone & Scott Coal Co., No. 2, Shinnston, W. Va., \$5,000.
Bunker Coal Co., Cassville, \$200,000.
Cub Creek Coal Co., Welch, \$100,000.
American Export and Inland Coal Corporation, Huntington, \$100,000.
Troll Coal Co., Fairmont, \$100,000.
The Stottlemeyer Coal Co., Gassaway, \$50,000.
Four Seam Coal Co., Charleston, \$100,000.
Cobb Coal Co., Elkins, \$50,000.
Grosvenor Coal Sales Co., Charleston, \$25,000.
Basin Coal Co., Shinnston, \$300,000.
Arthur D. Cronin Coal Co., Huntington, \$500,000.
Sesame Coal Co., Morgantown, W. Va., \$100,000.
Fair-Mor Coal Co., Morgantown, \$50,000.
Wilmar Coal Co., Shinnston, \$54,000.
Whitby Coal Co., Fairmont, \$100,000.
Pentridge Coal Co., Fairmont, \$100,000.
Raccoon Valley Coal Co., Tunnelton, \$250,000.
La Mar Coal Co., Morgantown, \$250,000.
Elk-New River Coal Co., Centralia, \$1,000,000.
Purity Pocahontas Coal Co., Bluefield, \$150,000.
Sanford Coal Co., \$10,000.
Maxwell Coal Co., Morgantown, W. Va., \$50,000.
Dorkent Coal Co., Huntington, \$500,000.

Mountain State Coal Corporation, Huntington, \$500,000.

The following non-resident corporations with a total capitalization of \$1,600,000 were organized during August: J. M. Coal Co., with general offices at Welch but operations in Ohio; Marshall Fuel Co., of Pittsburgh, \$5,000; Bahopen Coal Co., of Hutton, Md., \$20,000, with operations in Preston County; Superior Harlan Coal Co., of Huntington, with principal operations in Kentucky; Illini Coal Co., of Chicago, \$300,000; Lookout Coal Co., of New York, \$1,000,000.

Fifteen companies increased their capital stock as follows: West Virginia Bi-Product Coal Co., from \$20,000 to \$50,000; Raleigh Smokeless Fuel Co., from \$100,000 to \$300,000; Pine Bluff Coal Co., from \$50,000 to \$100,000; Soper-Mitchell Coal Co., from \$250,000 to \$500,000; Car-Diff Smokeless Coal Co., from \$150,000 to \$300,000; West Virginia & Pennsylvania Coal & Coke Co., from \$75,000 to \$125,000; Becco Fuel Co., from \$50,000 to \$100,000; Foy Splint Coal Co., from \$100,000 to \$200,000; Beaver Coal & Timber Co., from \$100,000 to \$300,000; Eagle Island Coal Co., from \$125,000 to \$500,000; Fayette Fuel Co., from \$75,000 to \$150,000; Adrian Hampton Coal Co., from \$15,000 to \$25,000; Lincoln Coal & Coke Co., from \$50,000 to \$100,000; Kanawha Consolidated Coal Co., from \$1,000,000 to \$2,000,000; Bowyer Smokeless Coal Co., from \$200,000 to \$300,000.

Traffic News

The Interstate Commerce Commission has scheduled for hearing at Chattanooga, Tenn., Oct. 23 the case of the Whitwell Coal Co. vs. the Railroad and Public Utilities Commission of Tennessee, which attacks the commission for refusing to permit increased intrastate rates on coal to go into effect, to the disadvantage of the complaining coal companies who ship interstate coal and who are required to pay the increased freight rates.

Pending investigation as to its reasonableness, the Interstate Commerce Commission has suspended from Oct. 5 to Feb. 2 the proposed cancellation by the Kanawha and Michigan Ry. Co., of joint through rates on bituminous coal from mines in West Virginia to points in Florida, Georgia, the Carolinas, Virginia and West Virginia. The proposed cancellation would put into effect combination rates which would result in an approximate increase of 70c. per ton.

Briefs have been filed with the Interstate Commerce Commission in the case of the Empire Steel and Iron Co., on rehearing, involving coal rates. In the former consideration of the case the Commission found that the maintenance of junction point rates on coal to points on the Morristown and Erie railroad while refusing to maintain said rates on coal to points on the Mineral railroad was prejudicial. The defendant railroad in a brief says the finding is inconsistent and unsupported by facts. The steel company has filed a brief opposing modification of the order.

The Interstate Commerce Commission has scheduled for hearing at Kansas City, Mo., on Oct. 18, the case of the Weir Smelting Co. vs. the Miami Mineral Belt R.R. involving the application of the railroad to continue to charge for slack coal from Pittsburgh, Kansas, to Canay, Kansas, rates which are lower than the rates maintained for like traffic from Deering, Kan., and other intermediate points.

Brief has been filed by the C. B. and Q. R.R. in the case brought by the Minnesota By-Product Coke Co., alleging discrimina-

tion in coke rates in favor of Chicago, Milwaukee and St. Louis as against St. Paul, Minn. The railroad defends the rates.

The Interstate Commerce Commission has authorized carriers to establish a minimum weight of 40,000 pounds, except when loaded to full space capacity, on gashouse coke from Knoxville, Tenn., to Atlanta, Ga.; Charleston, S. C.; Columbus, Ga.; Girard and Phenix City, Ala., and Greenville, Memphis and Nashville, Tenn., without observing the long and short haul clause.

The commission has scheduled for hearing in Washington on Oct. 13 the case involving coal rates from West Virginia mines to Southern points.

The commission has scheduled for hearing at Washington on Oct. 15 the application of the Delaware, Lackawanna and Western R.R. for authority to issue additional capital stock.

In a complaint to the Interstate Commerce Commission the Reeves Coal and Dock Co., of Minneapolis, asks for a refund of demurrage charges on coal held by the Soo Line R.R. contrary to orders for its shipment.

The Interstate Commerce Commission has scheduled for hearing at Indianapolis on Oct. 26 the case of the Opp Coal Co. vs. the Director General of Railroads, and the case of the Tuffly Bros. Pig Iron and Coke Co. vs. the Director General of Railways at St. Louis on Oct. 18.

Obituary

Wilbur Paul Graff, Treasurer of the Knickerbocker Fuel Co., died recently in Blairsville, Pa.

J. H. Zeller, of the American Coal Mining Co., was killed Oct. 3, in an automobile accident near Smith's Valley, Ind. Harry E. Snyder, of the American Coal Mining Co., an occupant of the same machine, was also killed.

Charles Miller, aged 60 years, manager of Mine 3 of the Mount Olive and Staunton Coal Co., at Edwardsville, Ill., was found dead at his home Sept. 26.

Personals

Charles E. Hobbs of Anchorage has applied to the United States Land Office at Juneau, Alaska, for renewal of permit to mine coal. Mr. Hobbs has been developing a mine at Houston, located at Mile 175 on the Alaska Ry. under a permit expiring last May.

C. L. Chapman has been appointed general superintendent of the Norton Division of the West Virginia Coal & Coke Co., with headquarters at Elkins.

Richard F. Cole has been appointed general superintendent of the Little Kanawha Division of the West Virginia Coal & Coke Co., with headquarters at Bower. Mr. Cole has been superintendent at the Bower plant.

Coming Meetings

Illinois Mining Inst. will hold its next meeting on Nov. 20 at Springfield, Ill. Secretary, Martin Bolt, Springfield, Ill.

Coal Mining Institute of America will hold its annual meeting Dec. 8, 9 and 10, 1920, in the Chamber of Commerce Auditorium, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

American Mining Congress will hold its annual meeting at Denver, Col., Nov. 15 to 19. Secretary, J. F. Calbreath, Munsey Building, Washington, D. C.

The Canadian Institute of Mining and Metallurgy will hold its second annual western meeting at Winnipeg on Oct. 25, 26 and 27. Headquarters will be at the Hotel Fort Garry. Local secretary, W. W. Berridge, 905 Union Trust Building, Winnipeg, Can.

National Conference of Business Paper Editors will hold its annual meeting Oct. 20, 21 and 22 at the Hotel Astor, New York City, in conjunction with the annual meeting of the Associated Business Papers. Secretary-treasurer, R. Dawson Hall, 36th St. and 10th Ave., New York City.

CURRENT PRICES—MATERIALS & SUPPLIES

IRON AND STEEL

STRUCTURAL MATERIAL—The following are the base prices, f.o.b. mill, Pittsburgh, together with the quotations per 100 lb. from warehouses at the places named:

	Mill	New York— One Year		St. Louis	Chicago
	Pittsburgh	Current	Ago		
Beams, 3 to 15 in.	\$2.45@3.10	\$4.58	\$3.47	\$4.04	\$3.97
Channels, 3 to 15 in.	2.45@ 3.10	4.58	3.47	4.04	3.97
Angles, 3 to 6 in., 1/2 in. thick.	2.45@ 3.10	4.58	3.47	4.04	3.97
Tees, 3 in. and larger.	2.45@ 3.75	4.63	3.52	4.09	4.02
Plates.	2.65@ 4.00	4.78	3.67	4.24	4.17

BAR IRON—Prices in cents per pound at cities named are as follows:

New York	Pittsburgh	Denver	St. Louis	Birmingham
5.50	4.75	4.95	3.57@ 4.50	5.00@ 5.25

NAILS—Prices per keg from warehouse in cities named:

	Mill	St. Louis	Birmingham	San Francisco
	Pittsburgh	Chicago	Denver	
Wire.	\$4.25	\$3.35	\$4.45	\$5.40
Cut.	None	6@8	....	8.95

TRACK SUPPLIES—The following prices are base per 100 lb. f.o.b. Pittsburgh for carload lots, together with the warehouse prices at the places named:

	Pittsburgh	Chicago	St. Louis	Denver	San Francisco	Birmingham
Standard railroad spikes 1 1/2 in. and larger.	\$4.00	3.40@ 4.00	\$5.34	\$5.50	\$7.75	\$6.00
Track bolts.	6@ 6.50	4.60@ 5.80	7.00	6.75	8.75	8.00
Standard section angle bars.	3@ 4	2.75@ 3.40	2.00	5.05	5.30	....

COLD FINISHED STEEL—Warehouse prices are as follows:

	New York	Chicago	Cleveland
Round shafting or screw stock, per 100 lb. base.	\$6.36	\$5.90	\$6.00
Flats, squares and hexagons, per 100 lb. base.	6.85	6.40	6.50

HORSE AND MULE SHOES—Warehouse prices per 100 lb. in cities named:

	Mill	Chicago	St. Louis	Denver	Birmingham
	Pittsburgh				
Straight.	\$5.75	\$7.00	\$7.00	\$8.15	\$7.25
Assorted.	5.85	7.15	7.25	8.40	....

STEEL RAILS—The following quotations are per ton f.o.b. Pittsburgh and Chicago for carload or larger lots. For less than carload lots 5c. per 100 lb. is charged extra:

	Pittsburgh		Chicago	
	Current	One Year Ago	Current	One Year Ago
Standard Bessemer rails.	\$55.00	\$45.00	\$45.00@ \$55.00	\$45.00
Standard openhearth rails.	57.00	47.00	47.00@ 57.00	47.00
Light rails, 8 to 10 lb.	2.88@ 3.50*	2.585*	2.45@ 3.50*	2.835*
Light rails, 12 to 14 lb.	2.84@ 3.34*	2.54*	2.41@ 3.34*	2.79*
Sight rails, 25 to 45 lb.	2.75@ 3.25*	2.45*	2.32@ 3.25*	2.70*

*Per 100 lb.

COAL BIT STEEL—Warehouse price per pound is as follows:

New York	Cincinnati	Birmingham	St. Louis	Chicago	Denver
\$0.15	\$0.16 1/2	\$0.18	\$0.12	\$0.15	\$0.18

DRILL STEEL—Warehouse price per pound:

	New York	St. Louis	Birmingham	Denver
Solid.	15c.	18c.	15c.	....
Hollow, 1/2 hex.	17c.	2c.	....	21c.

WIRE ROPE—Discounts from list price on regular grades of bright and galvanized are as follows:

	New York and St. Louis
Hercules red stand, all constructions.	20%
Patent flattened strand, special and cast steel.	20%
Patent flattened strand, iron rope.	5%
Plow steel round strand rope.	30%
Special steel round strand rope.	30%
Cast steel round strand rope.	22 1/2%
Iron strand and iron tiller.	5%
Galvanized iron rigging and guy rope.	+12%

Western and California territory — 20%, plow steel; 22 1/2%, galvanized rigging and guy rope.

CONSTRUCTION MATERIALS

ROOFING MATERIALS—Prices per ton f.o.b. New York and Chicago:

Tar felt (14 lb. per square of 100 sq. ft.) per roll.	\$3.55
Tar pitch (in 400-lb. bbl.) per 100 lb.	2.25
Asphalt pitch (in barrels) per ton.	56.50
Asphalt felt (light) per ton.	132.00
Asphalt felt (heavy) per ton.	138.00

LUMBER—Price of pine per M in carload lots:

	1-In. Rough 10 In. x 16 Ft.	2-In. T. and G. 10 In. x 16 Ft.	8 x 8 In. x 20 Ft.
St. Louis.	\$.....	\$.....	\$57.25
Birmingham.	50.00	50.00	48.00
Cincinnati.	55.00	50.00	50.00

EXPLOSIVES—Price per pound of dynamite in small lots and price per 25-lb. keg for black powder:

	Low Freezing 20%	40%	Gelatin 60%	80%	Black Powder
New York.	\$0.3325	\$0.3625	....	....	\$2.30
Boston.	.28	.31	.34	....	....
Kansas City.	.2475	.27	.30	.34	2.40
New Orleans.	.265	.295	.325	.3925	2.90
Seattle.	.18	.205	.225	.2925	2.60
Chicago.	.2175	.2525	.2975	.34	2.45
Minneapolis.	.2272	.2629	.2935	....	2.90
St. Louis.	.25	.285	.315	.3575	2.60
Los Angeles.	.22	.27	.31	....	2.95

MISCELLANEOUS

GREASES—Prices are as follows in the following cities in cents per pound for barrel lots:

	Cincinnati	St. Louis	Denver
Cup.	8.5	8.9	10 1/2
Fiber or sponge.	9.	12@ 15	20
Transmission.	10.	12@ 15	20
Axle.	5.	6@ 6 1/2	7 1/2
Gear.	6.5	8@ 9	7
Car journal.	12.0	23@ 25	....

BABBITT METAL—Warehouse prices in cents per pound:

	New York	Cleveland	Chicago
	Current	One Year Ago	Current
Best grade.	90.00	90.00	61.00
Commercial.	50.00	50.50	21.00

HOSE—Following are prices of various classes of hose:

	Fire	50-Ft. Lengths 8 1/2c. per ft.
Underwriters' 2 1/2-in.	....	30%
Common, 2 1/2-in.	....	....
	First Grade	Second Grade
1-in. per ft.	\$0.60	\$0.40
	Third Grade	\$0.30
	Steam—Discounts from list	....
First grade.	20%	Second grade.
	30%	Third grade.
	45%	....

LEATHER BELTING—Present discounts from list in fair quantities (1 doz. rolls):

Light Grade	Medium Grade	Heavy Grade
30%	25%	20%

RAWHIDE LACING—(For cut, best grade, 25%; 2nd grade, 30%. For laces in sides, best, 79c. per sq. ft.; 2nd, 75c. Semi-tanned: cut, 20%; sides, 83c. per sq. ft.)

PACKING —Prices per pound:	
Rubber and duck for low-pressure steam.	\$1.00
Asbestos for high-pressure steam.	1.70
Duck and rubber for piston packing.	1.00
Flax, regular.	1.20
Flax, waterproofed.	1.70
Compressed asbestos sheet.	.90
Wire insertion asbestos sheet.	1.50
Rubber sheet.	.50
Rubber sheet, wire insertion.	.70
Rubber sheet, duck insertion.	.50
Rubber sheet, cloth insertion.	.30
Asbestos packing, twisted or braided, and graphited, for valve stems and stuffing boxes.	1.30
Asbestos wick, 1/4- and 1-lb. balls.	.85

MANILA ROPE—For rope smaller than 1-in. the price is 1/2 to 2c. extra; while for quantities amounting to less than 600 ft. there is an extra charge of 1c. The number of feet per pound for the various sizes is as follows: 1-in., 8 ft.; 1 1/2-in., 6 ft.; 2-in., 4 ft.; 3-in., 3 ft.; 4-in., 2 ft. 10 in.; 5-in., 2 ft. 4 in. Following is price per pound for 1-in. and larger, in 1200-ft. coils:

Boston.	\$0.32 1/2	Birmingham.	\$0.324
New York.	.29	Denver.	.30
St. Louis.	.26 1/2	Kansas City.	.30 1/2
Chicago.	.27 1/2	New Orleans.	.28 1/2
Minneapolis.	.29 1/2	Seattle.	.28
San Francisco.	.27	Los Angeles.	.31

PIPE AND BOILER COVERING—Below are discounts and part of standard lists:

PIPE COVERING	BLOCKS AND SHEETS
Pipe Size	Standard List
Per Lin.Ft.	Thickness
1-in.	\$0.27
2-in.	.36
3-in.	.45
4-in.	.60
6-in.	.80
8-in.	1.10
10-in.	1.30
85% magnesia high pressure.	....
For low-pressure heating and return lines.	....
	4-ply.... 40% off
	3-ply.... 42% off
	2-ply.... 44% off